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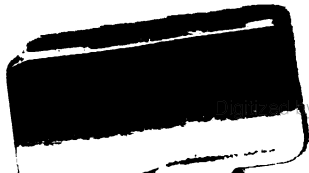
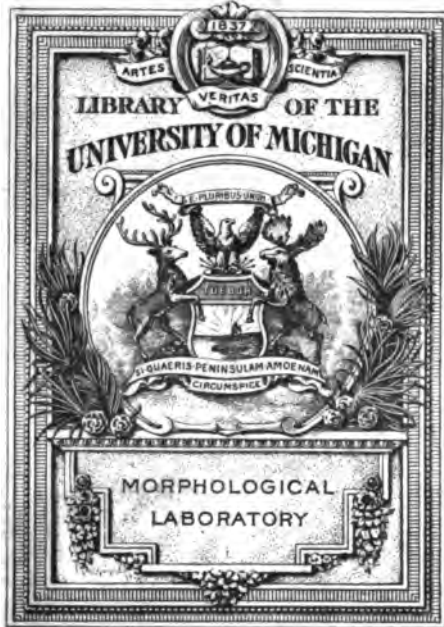
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STROLLS
BY
STARLIGHT
AND
SUNSHINE





"Many a perfume breathed
From plants that wake when
 others sleep:
From timid buds that keep
Their odour to themselves
 all day
But when the sunlight dies
 away,
Let the delicious secret out
To every breeze that roams
 about "

EVENING PRIMROSES.

[See page 32.]

THE HISTORY OF THE
CITY OF BOSTON

1780

1781

1782

STROLLS BY STARLIGHT AND SUNSHINE * *

119359

BY

W. HAMILTON GIBSON

AUTHOR OF "PASTORAL DAYS" "HIGHWAYS AND BYWAYS" ETC.

Illustrated by the Author

*"The truth of Nature is a part of the truth of God; to him
who does not search it out, darkness; to him who does, infinity"*



NEW YORK
HARPER & BROTHERS, FRANKLIN SQUARE

1891

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TO

H. H. G.

"A HEALTHY MAN IS THE COMPLEMENT OF THE SEASONS, AND IN WINTER SUMMER IS IN HIS HEART. THERE IS THE SOUTH. THITHER HAVE ALL BIRDS AND INSECTS MIGRATED, AND AROUND THE WARM SPRINGS IN HIS BREAST ARE GATHERED THE ROBIN AND THE LARK."



*“Every walk
is a sort
of crusade
preached by some Peter the
Hermit within us, to go forth
and reconquer this Holy
Land from
the hands of
the infidels.”*



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*“Let us not underrate the value of a fact.
It will one day flower in a truth.”*



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*"I shall be a benefactor if I conquer some realms from the night ;
if I report to the gazettes anything transpiring about us at that season
worthy of their attention ; if I can show men that there is some beauty
awake while they are asleep ; if I add to the domains of poetry."*

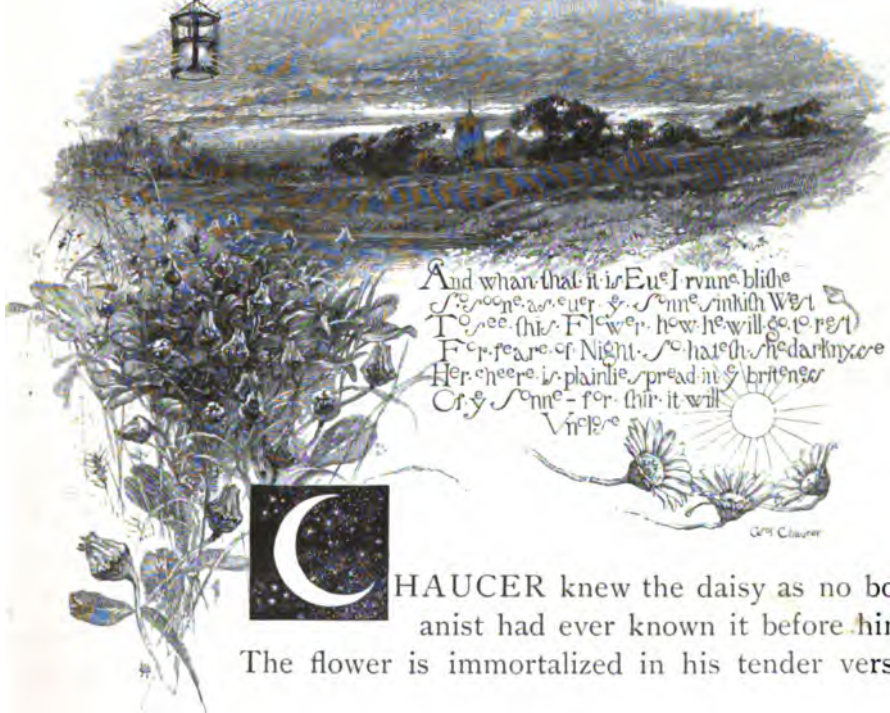
A MIDNIGHT RAMBLE

*“To-night I hunt ye darklynge wode,
Fine sporte mine schall bee,
Where deere and fox do brush ye dew
And glow thir eies to me.*

** * * * **

*“Mine be ye howlets eies to-night,
Ye sailyng moone my sonne,
Ye glo-bugge for my lanterne brite,
And humanitie my gunne.”*

A MIDNIGHT RAMBLE



And when that it is Eu^e I rans blithe
 To see the Flower how he will go to rest
 For feare of Night. So hateth he darknes
 Her cheere is plainlie spread in Britense
 Or y^e Sonne - for thir it will
 Vnchere

CHAUCER knew the daisy as no botanist had ever known it before him. The flower is immortalized in his tender verse.

“And ever I love it and ever like new
 And ever I schall till that mine hart die,”

he exclaims, with the simple joyousness of a child with its daisy chain, and herein has he set a worthy text for all the botanists and nature students present and to come, if they would gather the higher harvest of their calling.

What is the aftermath which the poet gleans in his neighbor's field?

"A second crop thy acres yield,
Which I gather in a song,"

sings Emerson. That is a poor and lifeless botany that is not written full with songs.

Chaucer's daisy was his favored companion; his devotion was unremitting. He met its opening fringes at the dawn; he lingered by it as it closed its eye at twilight. Sleeping or waking, noon or midnight, he could give an account of his *protégée* for every hour. How few of the proud followers, of Linnaeus know how their erudition is mocked in the meadow masquerade, or what their hard-named minions are up to in the dark hours!

My first midnight walk was a revelation, and a severe shock to my comfortable self-conceit. The woods and meadows had been full of faces that I had known and welcomed familiarly for years in my daily walks. But when I sallied forth with my lantern that night, I stepped from my threshold upon foreign sod. I found no greeting nor open palms, and I lost my way as though in a strange land. Indeed "is not the midnight like Central Africa to most of us?"

As I stood in perplexity scanning my surroundings in the meadow a strange form closely hooded beneath its folded leaves seemed to murmur at my elbow, and I listened.

"Say not that you know a single one of us," it said, in a roguish clover-scented whisper. "It is not



enough, *homo sapiens*, to note our form, our anatomy, the color of our raiment, or hang a Latin tag about our necks, or to check us off upon your proud list and lay us on the shelf in the musty *hortus siccus* of your self-complacency. No; leave us to our pleasant dreams, omnivorous mammal, get thee to the hay-mow; there is thy garden, there thou wilt find thy sympathetic friends and thy greeting." Such was the burden of the silent slumberous murmur floating all about me in the tangle of fragrant dreams dispelled in my onward tread. But the eager pupil of my inward eye was even now converted, and having wet my knees in the dews in fitting propitiation of humility, I was welcomed again, and opened a fresh humble page in my botany. And there was much to chronicle. In whatever direction I might look over the broad meadow I found the same strange complexion everywhere to the limits of my vision, and what "a pleasing land of drowsy-head it was!"

"We are a' noddin', nid-nid-noddin',"

seemed the universal lullaby. What a convocation of nightcaps and sleepy-heads!

The clovers are indeed a drowsy family; they keep regular hours, and make a thorough business of their slumber—red clovers with their heads tucked under their wings, as it were, the young blossom clusters completely hooded beneath the overlapping upper pair of leaves, and



every individual leaf below bowed with folded palms. The white clovers were similarly well brought up, and continued their vespers through the livelong night, their little praying bands to be seen everywhere along the path. The yellow hop clover played all sorts of antics with its leaves without seeming rhyme or reason. The tall bush clover, rising here and there among the slumberous beds, presented a complete surprise, being entirely changed from its diurnal aspect, the ordinary generous leafy spread of foliage now assuming the shape of an upright wand, each three-foliolate leaf being raised upon its stem, with the leaflets folded inward, clasping the maternal stalk. It had its arms full indeed, and seemed conscious of its heavy responsibility. The trailing ground-nut vine and the delicate wild bean were hardly recognizable in their odd night-dress; and the desmodiums at the border of the woods presented a singular contrast of drooping listlessness, with each leaflet hanging as vertically as a plummet. I sought the familiar plummy beds of the little partridge-pea, wondering what sort of a reception I would meet from that quarter, but I found these plants even more fast asleep and transformed than their drowsy neighbors, and had trodden on a number of the plants ere I discerned them, for, like the sensitive mimosa, which they so much resemble, and which

“opened its fan-like leaves to the light,
And closed them beneath the kisses of night,”

these tiny leaflets were now folded in a long flat ribbon for each leaf, presenting thin edges to the sky, and hardly distinguishable from the thin seed-pods among them. Nor were these all. Folded leaves and strange sleeping forms were nodding about me on every hand as I walked this dreamy realm — acres of “billowy drowse” nursed in the cradle of a zephyr. What sort of a “wide-awake” poet was that, I mused, who lamented from his troubled pillow:

“A flock of sheep that leisurely pass by
One after one; the sound of rain, and bees
Murmuring; the fall of rivers, winds, and seas;

Smooth fields, white sheets of water, and pure sky:
I've thought of all by turns, and still I lie
Sleepless."

There is a belief as old as tradition that Nature in her mercy sends the bane and the antidote side by side, and a ready remedy for every ill. The bruised dock assuages the nettle's sting. "In dock, out nettle!" exclaims the whimpering British lad, suiting the action to the word. Thoreau, when he sprained his ankle on Mount Washington, looked about him, and for the first time discovered the *Arnica* at his elbow. How fortunate had it been with our wakeful poet had he but realized his resources, for the most confirmed victim of insomnia could hardly have repressed a yawn at the sight of this land of nod beneath his window.

The nature of the nocturnal movements and attitudes of plants, both in leaves and flowers, has long been a theme of speculation among botanists. In the case of many flowers the night attitudes have been conclusively shown to have relation solely to their fertilization by insects.

The drooping attitude of leaves at night was commonly supposed to indicate an aversion to moisture, many plants assuming the same position during rain as in the dew, thus seeming to verify the conjecture; but when the same pranks were played in a cloudy day or a dewless night, the explanation had to be abandoned. In the clover tribe the nocturnal positions already described seem to be assumed only in the darkness, and this invariably, dew or no dew, while the leaves seem to revel in the rain, remaining freely open.

I doubt not that if our eyes were sharp enough they might discern a certain strangeness in the nocturnal expression of every plant and tree, such as is remarkably emphasized in the locust, which is here pictured, and which, by-the-way, is a member of that same leguminous order of plants with the clovers, especially noted for the pronounced irritability of the leaves and odd nocturnal capers, and whose seeming vital consciousness has caused some botanists to class them at the extremity of their system,

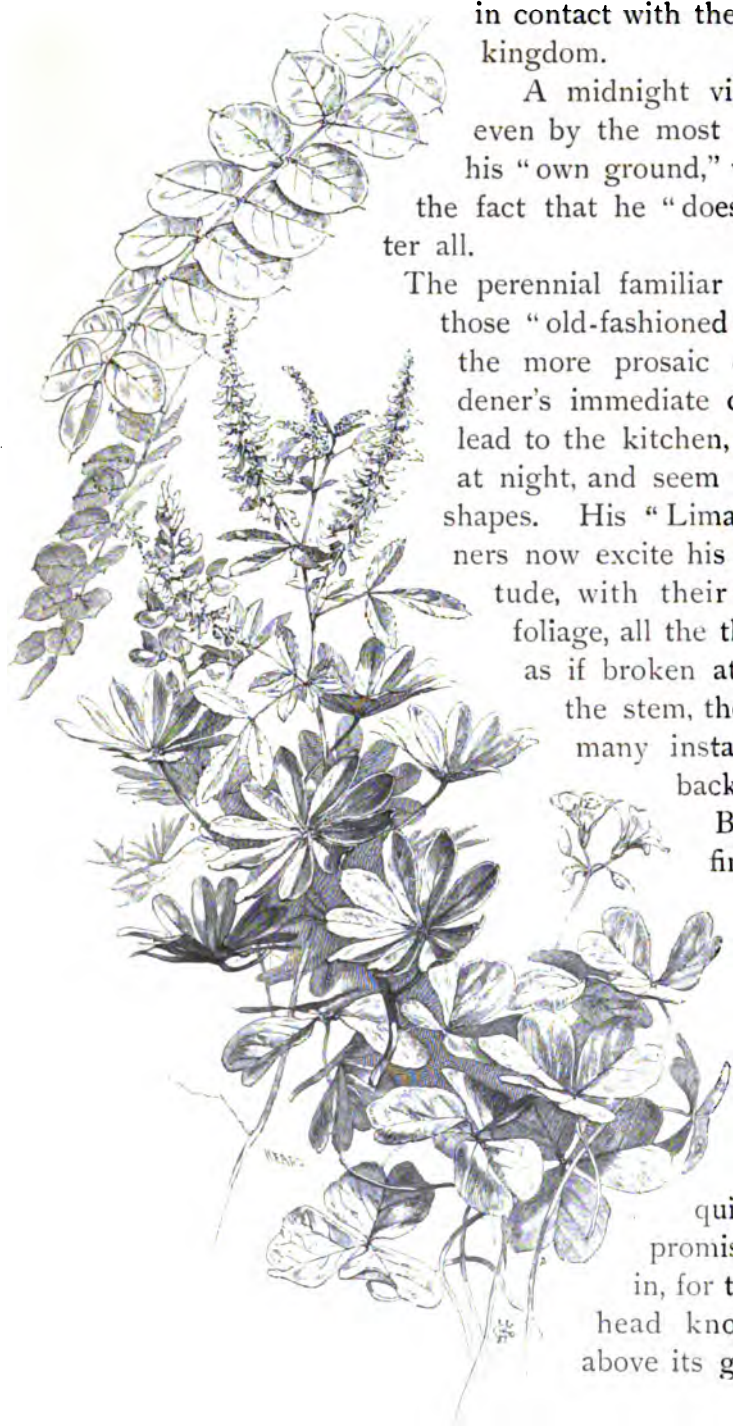
in contact with the limits of the animal kingdom.

A midnight visit to one's garden, even by the most venerable devotee of his "own ground," will perchance reveal the fact that he "doesn't know beans" after all.

The perennial familiar blooming borders of those "old-fashioned flowers," as well as the more prosaic domain of our gardener's immediate concern, whose paths lead to the kitchen, wear a strange look at night, and seem peopled with foreign shapes. His "Limas" and scarlet-runners now excite his wonder, if not solicitude, with their apparent drooping foliage, all the three leaflets nodding as if broken at their juncture with the stem, the two side leaflets in many instances touching their backs beneath the stem.

But he will find them firm and self-willed in their attitude.

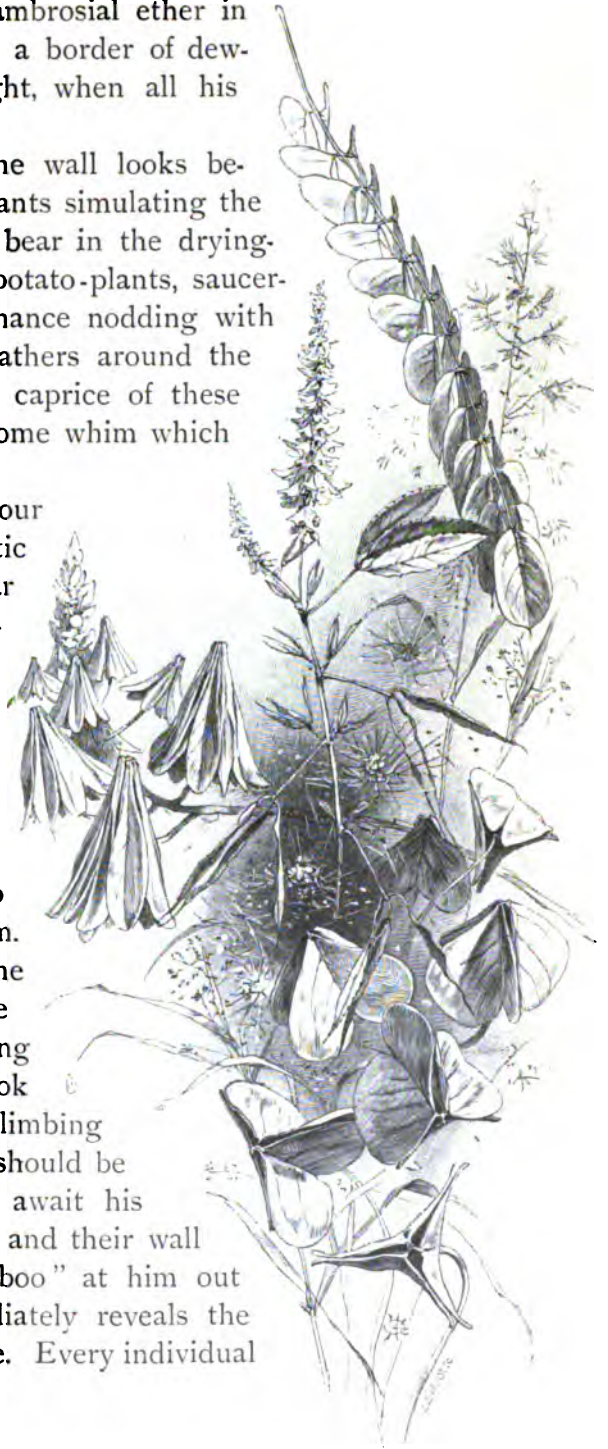
His pea blossoms have taken in sail, and nod on their keels. The leaves of his young cabbage-plant, usually more or less spreading, now stand quite erect, guarding that promising young head within, for this plebeian cabbage-head knows a trick or two above its garden associates, and



can get a blessing from the ambrosial ether in a bright glistening sheen and a border of dew-drops, even on a cloudy night, when all his neighbors are athirst.

The tobacco-field over the wall looks bewitched and all on end, the plants simulating the conical shape they soon shall bear in the drying-house. The flowers on the potato-plants, saucer-shaped by day, are now perchance nodding with their open rim puckered in gathers around the central stamens—a common caprice of these flowers, but dependent upon some whim which I have not yet solved.

Turning to his “posies,” our floriculturist may pick an exotic bouquet from his own familiar borders. His starry “blue-bottles” have raised their horns and assumed the shape of a shuttlecock. His balsams wear a hang-dog look, with every leaf sharply declined. Certain of his coreopsis blossoms are turned vertically by a sharp bend at the summit of the stem. Many of his favorites, like the *Eschscholtzia* blossoms, have closed their eyes or perhaps hung their heads, and refuse to look him in the face, while his climbing nasturtiums, especially if they should be of the dwarf variety (*minus*), await his coming in hushed expectancy, and their wall of sheeny shields flashes a “boo” at him out of the darkness, which immediately reveals the changed position of their foliage. Every individual

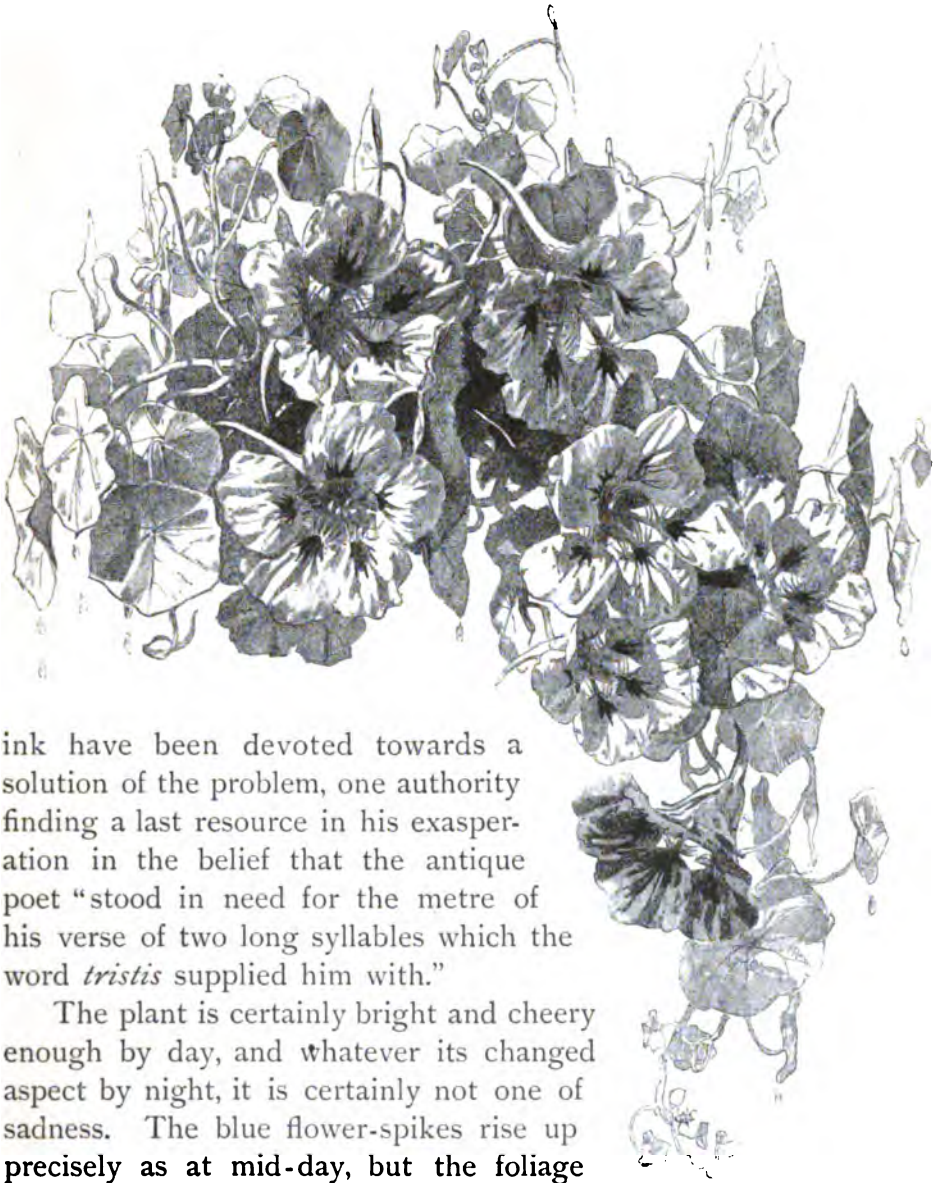


shield is now seen to stand perpendicularly, the stem being bent in a sharp curve. In the midst of his surprise the flowers one by one now seem to steal into view, peering out here and there behind the leaves, and he will discern a grimace there that he never noted before. That bright bouquet upon his mantel will henceforth wear a new expression for him and a fresh identity. He will find himself exchanging winks thitherward now and then, and hover about the room among his friends in the proud consciousness of a certain preferment not vouchsafed to common mortals.

The effect of such a bank of nasturtium leaves as the writer recently observed is irresistibly queer. So instinct with mischievous consciousness did it seem that he found himself entering into conversation at once, and laughed outright in the darkness. It has been supposed that this vertical position of the leaf was assumed to avoid the collection of dew, but this is obviously an error. There is no disposition in the nasturtium to avoid moisture, as would be apparent to any one who has watched the leaves during rain, catching and coddling the great dancing drop at its hollowed centre, and loath to let it fall.

Our midnight gardener has still further surprises in store for him among his plantations. Following the alluring fragrance of his melilot, he turns the rays of his lantern among its branches, and finds them full of nocturnal capers. The single leaflet of the melilot is threefold, like a clover, to which it is closely akin. At night these three leaflets twist edge uppermost on their stems, with the faces of the outer pair turned inward, while the end leaflet folds its face flat to one side or the other, to the cheek of its chosen chum for the night. And there they are, a dozy company in truth, yet not without a subtle suggestion that it may all be a subterfuge for the moment to cover some mischief or other.

And here is another interesting specimen close by, a member of that same somniferous tribe—the blue lupine—the “sad lupine” of Virgil (*tristis lupinus*). Just why Virgil should have attributed sadness to the lupine I believe has not been satisfactorily decided, although many learned pens and much printer’s



NASTURTIUMS.

ink have been devoted towards a solution of the problem, one authority finding a last resource in his exasperation in the belief that the antique poet "stood in need for the metre of his verse of two long syllables which the word *tristis* supplied him with."

The plant is certainly bright and cheery enough by day, and whatever its changed aspect by night, it is certainly not one of sadness. The blue flower-spikes rise up precisely as at mid-day, but the foliage presents a striking contrast, every wheel-shaped leaf now drooping like a closed parasol against the stem. The various lupines are full of individual whims in their choice of sleeping postures, some species raising their leaflets in the form of a beaker, and others following

the bent of the nasturtium already described. Every corner of our garden offers some similar revelation, and even the plebeian weeds have caught the odd contagion, and "do as the Romans do."

The formidable mats of pusley which our gardener had singled out for extermination on the morrow—with anticipation, perhaps, of a "mess o' greens"—are now supplanted by an unrecognizable net-work of knotty stems, the artful leaves concealed flat against the prostrate red stalks, and with edges upward.

Tall strange columns loom up, white and ghostly, beneath the glare of your lantern, here and there among the potato-plants. They prove to be pigweeds, but for strangeness they might have sprung up like mushrooms since your last visit, most of the upper leaves, which during the day had extended wide on their long stems, now inclining upward against the stalk, and enclosing the tops of younger branches. Still other older plants are seen with leaves extended much as at mid-day, but nearly all turned edge-wise by a twist in the stem.

The chickweed's eye is closed, and

"Closed is the pink-eyed pimpernel."

The creeping-mallow blossom now ignores its proud array of "cheeses," coiling in a close cone, and the oxalis flower has left her shooting pods to keep the vigil, closed and nodding upon its stem, while its foliage masquerades in one of the oddest disguises of all this somnambulistic company, the three heart-shaped leaflets reflexed and adjusting themselves back to back around the stem with many curious contortions.

Whatever the disputed function of this nocturnal movement, it has at least been shown to be essential to the life of the plant, careful experiment having demonstrated, according to one authority, that "if the leaves are prevented from so regulating their surface, they lose their color and die in a few days." Darwin also conclusively demonstrated the same fact with various other plants.

The sleepest beds in the garden, at least as to the flowers, will be found among the poppies.

“Not poppy, nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow'dst yesterday,”

mutters Iago to Othello. The poppy, “lord of the land of dreams,” sets a beautiful example of that somnolence for which it is itself the emblem and ministering nepenthe.

In a recent moonlight stroll in Switzerland I visited the poppies in their native haunts, the common wild species whose flaming scarlet sets the foreign summer fields ablaze in the mid-day sun. But I found their fires now smouldering beneath the dew, and giving no token beneath the moon, for the blossoms were closed in luxurious slumber.

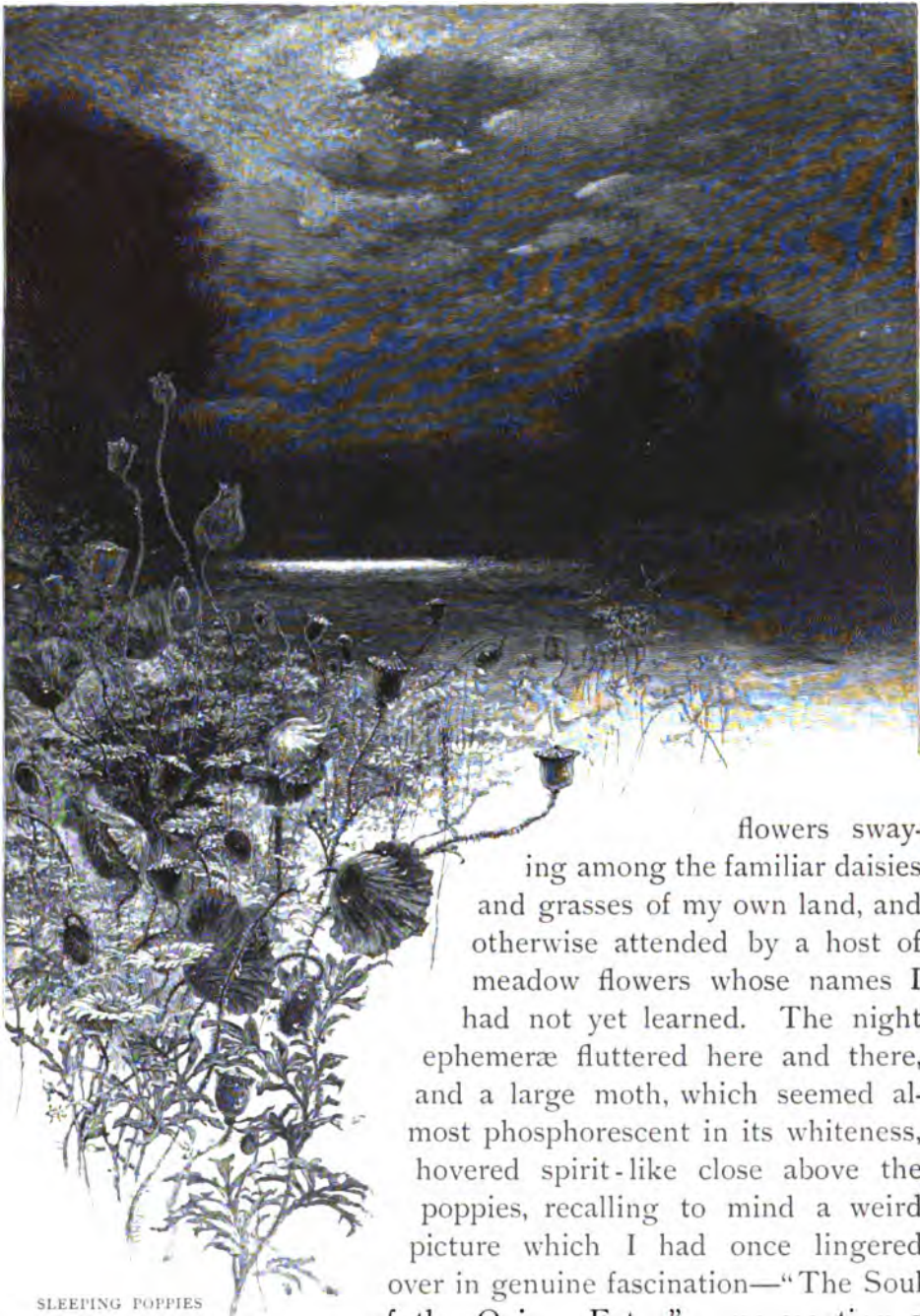
“How many thousand of my poorest subjects
Are at this hour asleep!”

moans Shakespeare's king.

“O sleep! O gentle sleep!
Nature's soft nurse, how have I frighted thee,
That thou no more wilt weigh my eyelids down,
And steep my senses in forgetfulness?”

What a device of mockery had our midnight poppy proved to this monarch with “uneasy head,” who wooed in vain, and even traduced, the “dull god sleep” that should affiliate with the “happy low” and shun “the kingly couch”—the “canopies of costly state” in the “perfumed chambers of the great”! For is not the crowned head of this poppy “pavilioned richer than the proudest king's”? its sleep lulled in its own drowsy incense, in luxurious “perfumed chambers,” curtained in canopies of lustrous damask?

In the dim moonlight I beheld thousands of these folded



SLEEPING POPPIES

flowers swaying among the familiar daisies and grasses of my own land, and otherwise attended by a host of meadow flowers whose names I had not yet learned. The night ephemeræ fluttered here and there, and a large moth, which seemed almost phosphorescent in its whiteness, hovered spirit-like close above the poppies, recalling to mind a weird picture which I had once lingered over in genuine fascination—"The Soul of the Opium-Eater"—representing a gauze-winged moth in the moonlight sipping "the drop serene" from the open chalice of a poppy—a bold Hawthornesque conceit

worthy a more notable recognition than it received, none the less so because it quarrelled with literal fact, for my spirit moth found no open poppy-cups at midnight. The poppy welcomes all the "meadow tribes" during the day, but at night her four damask curtains are closely drawn, the two inner petals being coiled within each other above the tiny head that wears a crown within, and the outer pair enfolding all in their crumpled bivalve clasp. And yet how few have ever seen a sleeping poppy!

The wilds are full of companion instances of sleeping beauty, but there are few lovelier than is afforded in our own fringed gentian.

"Thus doth thy sweet and quiet eye
Look through its fringes to the sky,"

sings Bryant in his beautiful tribute to this flower—a sentiment which is true of the blossom by day, but this darling closes its "fringed curtains" at night like other blue-eyed folk. So do many of the asters, their drowsy fringes coiling close in various sleepy curls and cuddles. We have already noted, in our initial vignette, the daisy, "how he will go to rest."

"Oft have I watched thy closing buds at eve,
Which for the parting sunbeams seem to grieve,"

says a poet who followed the footsteps of Chaucer; as did Wordsworth also:

"And when at dusk, by dews opprest,
Thou sink'st, the image of thy rest
Hath often eased my pensive breast
Of careful sadness."

Shakespeare, with his characteristic omniscience and felicity, alludes to the similar habit of the marigold—

"that goes to bed with the sun,
And with him rises weeping."

And again in the following lines—what an inspiring epitome of the dawn!

“Hark! hark! the lark at heaven’s gate sings,
And Phœbus ’gins arise,
His steeds to water at those springs
On chalice flowers that lies;
And winking Mary-buds begin
To ope their golden eyes.”

Indeed, the daisy and the marigold are not singular in this retiring tendency. It may be said that most flowers manifest a disposition to nod or close at nightfall—the wild rose, mallow, pea-blossom, crane’s-bill, oxalis, chickweed, mullein, and certain buttercups, for example, and the list might be multiplied indefinitely.

To all these dozy tribes is opposed a striking contrast in our beautiful evening primrose, one of the loveliest of night-blooming flowers. In the midst of all this somnolence what, then, in this particular flower, is that

“golden care
That keeps the ports of slumber open wide
To many a wakeful night?”

Not the quality of “care” in the poet’s thought, ’tis true, but care certainly in the sense of conscious, hopeful purpose and bright anticipation. For who that has lingered in the twilight and watched the eager bursting buds of the primrose, seen the impulsive greeting in the open welcome



of its chalice, and caught the enticing fragrance of its earliest breath—who that has known these can deny the spell of its sweet consciousness? It is a rash hand that will pluck the primrose in the twilight. How well Keats knew its impulsive ways!—

“A tuft of evening primroses,
O'er which the wind may hover till it dozes,
O'er which it well might take a pleasant sleep,
But that 'tis ever startled by the leap
Of buds into ripe flowers.”

I recall also the beautiful lines of Emerson to his recluse Rhodora, and which are equally applicable to the twilight primrose:

“Rhodora! if the sages ask thee why
This charm is wasted on the marsh and sky,
Tell them, dear, that if eyes were made for seeing,
Then beauty is its own excuse for being.”

But such counsel would be wasted on both flowers. I am sure the evening primrose would carry no such message to the sages; for whatever of sweet vanity she may or might possess, hers is a deeper consciousness.

The flower that blooms by night, moreover, could hardly be suspected of vanity. Our evening primrose does not bloom in the dark hours for mere sentiment or moonshine, but from a motive which lies much nearer her heart. “Often when the nights are very dark,” says an old writer, “her petals emit a mild phosphoric light, and look as if illuminated for a holiday. And he who does not fear to be out in her wild and lonely haunt may see a variety of nocturnal ephemeræ hovering around the lighted petals, or sipping at the flowery fountains, while others rest among the branches or hurry up the stems as if fearing to be too late.”

From the first moment of her wooing welcome our evening primrose listens for murmuring wings, and awaits that supreme fulfilment anticipated from her infant bud. For it will almost

invariably be found that those blossoms which open in the twilight have adapted themselves to the crepuscular moths and other nocturnal insects. This finds a striking illustration in the instances of many long tubular-shaped night-blooming flowers, like the honeysuckle and various orchids, whose nectar is beyond the reach of any insect except the night-flying hawk-moth. It is true that in other less deep nocturnal flowers the sweets could be reached by butterflies or bees during the day if the blossoms remained open, but the night murmurers receive the first fresh invitation, which, if met, will leave but a wilted, half-hearted blossom to greet the sipper of the sunshine. This beautiful expectancy of the flower determines the limit of its bloom. Thus, in the event of rain or other causes preventive of insect visits, the evening primrose will remain open for the butterflies during the following day, when otherwise it would have drooped perceptibly, and extended but a listless welcome. I have seen this fact strikingly illustrated in a spray of mountain-laurel, whose blossoms lingered in expectancy nearly a week in my parlor, when the flowers on the parent shrub in the woods had fallen several days before, their mission having been fulfilled. In the house specimens the radiating stamens remained in their pockets in the side of the blossom cup, and seemed to brace the corolla upon its receptacle. These stamens are naturally dependent upon insect agency for their release, and the consequent discharge of pollen, and I noticed that when this operation was artificially consummated the flower-cup soon dropped off or withered.

Coleridge told only half the truth, and that without knowing it—and something of a libel besides—in the lines of his poem “No Life Vain”—

“The very shadow of an insect’s wing,
For which the violet cared not while it staid,
Yet felt the lighter for its vanishing”—

for that brief period perhaps compassed the dream and consummation of our violet’s life. There is a similar negative recognition of a beautiful harmony in nature in Shelley’s allusion to those

“soft moths that kiss
The sweet lips of flowers, and harm not.”

Bryant often sang of the bee :

“In meadows red with blossoms all summer long the bee
Murmurs, and loads his yellow thighs,”

he says, but leaves us to conjecture the gladness of the blossom as it helps the little plunderer load his saddle-bags in the fulfilment of a divine design of which his greed is but the instrument.

“Bees that soar for bloom,
High as the highest peak of Furness fells,”

sings Wordsworth again—a rather long flight for an uninvited guest!—allusions which occur to my mood as emphasizing a missing element in the poetry of flowers, at least in their association with insect life. When the poet's butterfly visits the flower, the insect is commonly the hero, the flower but a passive agent or a pretty background in the performance. The bee seeks the blossom; the blossom does not consciously await the bee, but always plays second fiddle to his murmuring. They have wedded the rose to the nightingale, but the beautiful plan of vital interdependence and reciprocity unwittingly suggested in the line of Hood's—

“The broom's betrothed to the bee”—

has been quite generally overlooked by a devoted class of nature's devotees, from whom we had a right to expect a forecast of the more philosophical revelations of the scientist, for the poet sees, where the scientist merely discovers.

Browning has proven the seer of the twilight flower, and in a tender allegory has truly voiced its perfume. It is the flower that now sings, and though “in a gondola,” how like the voice of the evening primrose!—or the woodbine!—



“The moth’s kiss first!
Kiss me as if you made believe
You were not sure this eve
How my face, your flower, had pursed
Its petals up.



So here and there
You brush it, till I grow aware
Who wants me, and wide open burst.

“The bee’s kiss now!
Kiss me as if you entered gay

My heart at some noontday,
A bud that dared not disallow
The claim, so all is rendered up,
And passively its shattered cup
Over your head to sleep I bow.”

“Poetry comes nearer to vital truth than history,” says Plato, and in similar vein of thought Hawthorne avers that “creation was not finished until the poet came to interpret and complete it.” But after all, were not such disciples as Darwin and Müller and Sprengel, the prophets of the flowers, more than mere scientists?

Returning to our primrose glen, how irresistibly do we bring to mind those fragrant lines of Moore’s, even though they now sing to my twilight “primrose,” where they sang of woodbine and “jasmine buds” with him!

“’Twas midnight—through the lattice wreathed
 With woodbine many a perfume breathed
 From plants that wake when others sleep.
 From timid jasmine buds that keep
 Their odor to themselves all day,
 But when the sunlight dies away
 Let the delicious secret out
 To every breeze that roams about.”

Look! Our misty primrose dell is fast lighting its pale lamps in the twilight. One by one they flash out in the gloom as if obedient to the hovering touch of some Ariel unseen—or is it the bright response to the fire-fly’s fitting torch? The sun has long sunk beneath the hill. And now, when the impenetrable dusk has deepened round about, involving all, where but a moment since all was visible, this shadowy dell has forgotten the sunset, and knows a twilight all its own, independent of the fading glow of the sky. It was a sleepy nook by day, where it is now all life and vigilance; it was dark and still at noon, where it is now bright and murmurous. The “delicious secret” is now whispered abroad, and where in all the mystic alchemy of odors or attars shall you find such a witching fragrance as this which is here borne on the diaphanous tide of the jealous gliding mist, and fills the air with its sweet enchantment—the stilly night’s own spirit guised in perfume? Yonder bright cluster, deep within the recess of the alders, how it glows! fanned by numerous feathery wings, it glimmers in the dark like a phosphorescent

aureole—verily as though some merry will-o'-the-wisp, tired of his dancing, had perched him there, while other luminous spires rise above the mist, or here and there hover in lambent banks beyond, or, like those throbbing fires beneath the ocean surge, illumine the fog with half-smothered halo. This lustrous tuft at our elbow! Let us turn our lantern upon it. Its nightly whorl of lamps is already lit, save one or two that have escaped our fairy in his rounds, but not for long, for the green veil of this sunset bud is now rent from base to tip. The confined folded petals are pressing hard for their release. In a moment more, with an audible impulse, the green apex bursts asunder, and the four freed sepals slowly reflex against the hollow tube of the flower, while the lustrous corolla shakes out its folds, saluting the air with its virgin breath.

The slender stamens now explore the gloom, and hang their festoons of webby pollen across their tips. None too soon, for even now a silvery moth circles about the blossom, and settles among the out-stretched filaments, sipping the nectar in tremulous content. But he carries a precious token as he hies away, a golden necklace, perhaps, and with it a message to yonder blossom among the alders, and thus until the dawn, his rounds directed with a deep design of which he is an innocent instrument, but which insures a perpetual paradise of primroses for future sippers like himself.

Nor is it necessary to visit the haunt of the evening primrose to observe this beautiful episode. The same may be witnessed almost any summer evening much nearer home, even about your porch, and among city walls, heralded by those fresh, dewy whiffs from the night-blooming honeysuckle, where the bright beves of blushing buds are bursting in anticipation of that "kiss which harms not," as the welcome sphinx-moth, piloted by the two great glowing lanterns of its eyes, hovers in the murmurous cloud of its humming phantom-wings. How often have I watched these mimic humming-birds in the gathering dusk, whirling about the flowers, following the circuit of each fresh-blown cluster, tilting and swaying in their buoyant poise above the blossom's throat,

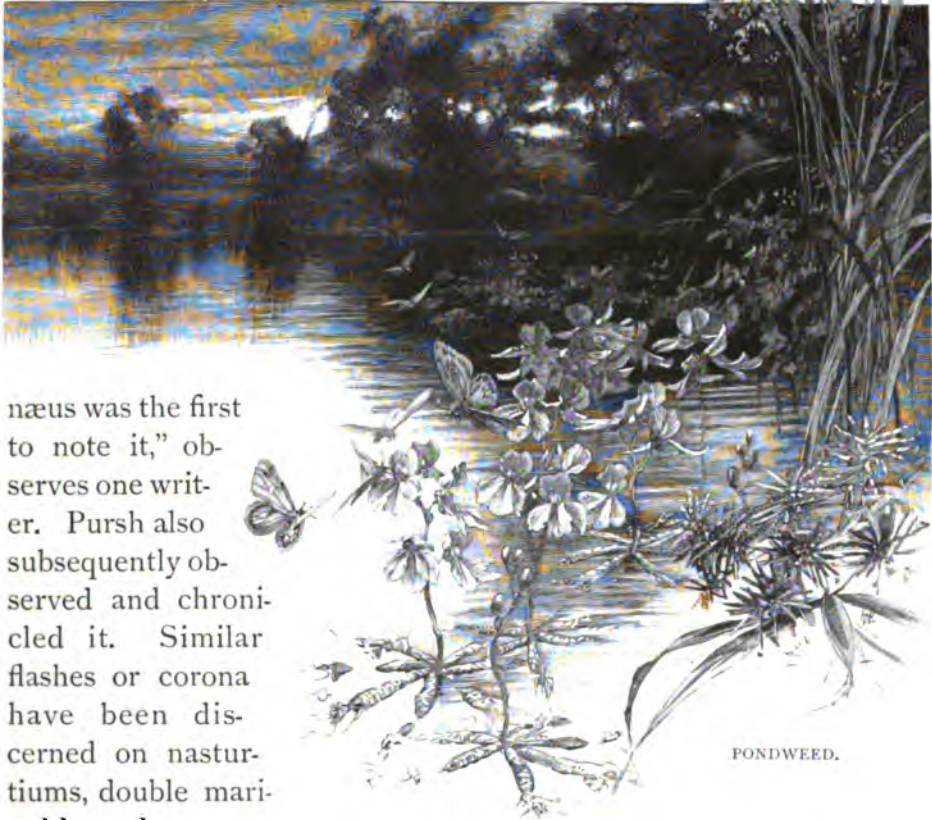
only their long bodies visible in the fuzzy, buzzy halos of wings, the slender capillary tongues uncoiled, nearly six inches in length, and thrust in turn deep into the honeyed tubes.

The honeysuckle bush was a favorite twilight haunt in those memorable early years of my entomological fervor. One single evening I remember bringing to my net over thirty specimens, great and small. What a strange fascination they always had for me, with their great bulging eyes, their grotesque shape, their mysterious flight, and queer exotic look generally—as unlike the creatures of the sunshine as though from the Stygian world. Indeed, my first specimen could not have amazed me more had I bagged a chimera fresh from the moon, for these sphinx-moths are hid from the sharpest eyes by day; protégés of gray rocks and fences, or merged in the fissured bark of trees, eluding the most careful search, their frequent glowing color now smouldering beneath the ashes of their upper wings, from which they rise like a phoenix in the dusk. These moths are mostly dressed in sombre colors, but some of them bear the aureate hues of the sunset on their wings, others are black as night, or painted with olives dark as the midnight trees, and one there is lit with the rosy tints of dawn, as though thus to typify in their motley the sombre interval of their animated being. Who that has witnessed this revelation among the honeysuckles could be any longer insensible to the vital interdependence between this blossom and the moth?

Most of the nocturnal flowers have thus adapted themselves especially to these long-tongued Lepidoptera, hiding their honey in such deep tubes or spurs that it is only accessible to the hawk-moths. To these, then, is intrusted the perpetuity of many night-flowering plants.

In attributing a phosphorescent quality to the evening primrose I have mainly followed the license of fancy, although, if the scientists are to be believed, I have indeed scarcely wandered from the literal truth. For the singular luminous glow of this and other nocturnal flowers has long attracted the attention of the curious, and positive qualities of inherent light have been

accorded in many instances. It is true, as one authority avers, that "the evening primrose is perfectly visible in the darkest night," from which fact phosphorescent properties have been ascribed to it. "Many perfectly authenticated instances are on record of luminous, electrical, lightning-like phosphorescence playing about flowers. The daughter of Lin-



PONDWEED.

næus was the first to note it," observes one writer. Pursh also subsequently observed and chronicled it. Similar flashes or corona have been discerned on nasturtiums, double marigold, red poppy,

geraniums, tuberose, sunflower, and evening primrose, according to various authorities. It is a rash and overweening commentator who would challenge this array of competence, and so I forbear. Saint Elmo's light may have taken to dry land and favored the midnight watch of the primrose above the fog, but I have never seen it with my natural eye.

Goethe also discerned a similar luminous aureole around the poppy, but explained it as a "spectral image in complementary color"; an instance, it seems to me, of where the poet's vision was more keen and philosophic than that of the scientist. This spectral image can be evoked by any one in a simple philosophic experiment. A moment's steady gaze at the left side of a blossom cluster, the eyes being then instantly turned to the opposite side, will reveal the colored aureole around this portion of the cluster, and always in the complementary hue—a halo which plays incessantly around the petals as the eyes are shifted. Thus the spectre of the poppy is a ghostly green-white; that of the primrose is purple.

Whether or not the primrose is thus endowed may be similarly demonstrated by any one, and I think it will be found, as in the writer's experience, that the brightest cluster, however luminous it may appear in its haunt as a condensing mirror of the midnight sky, will be invisible in a perfectly dark closet—conditions under which true phosphorescence would glow with added brilliancy.

I have observed this same luminous deception prettily illustrated in the instance of the pondweed (*Utricularia*), with its floating candlestick dancing on the ripples, the faint light from its yellow petals attended by numerous circling moths.

But we are not without numerous examples of true phosphorescence among our vegetation, for the "fox-fire" of the midnight forest is a true plant. How it gleams in the dank nocturnal woods!—most brilliant in the deepest recesses, as though feeding its fire from the very darkness. There is a whole tribe of these phosphorescent fungi—luminous moulds, mushrooms, and toadstools. They shine through crevices in the bark of trees or among the leafy loam. They glare at you with true feline suggestiveness from the deep hole in decayed tree or shadowy den amid the rocks. Following the hint of a peeping speck of fire, I have torn the bark from a decayed prostrate trunk in the woods, and liberated a flood of brilliant light covering several square feet in area.

Hawthorne, among his reminiscent sketches, relates a similar

discovery in a midnight journey on a canal—"a fallen tree that was wholly converted into a mass of diseased splendor, which threw a ghastliness around." The strange fascination of the scene invited him thither and evolved a train of moral philosophy, in which he became so deeply absorbed that he missed his boat and was obliged to "foot it" for miles with "a flambeau from the old tree" to light his path.

Another night-walker describes a phosphorescent log twenty-four feet long "a mass of light." Fallen trees, bleached and entirely devoid of bark, and innocent enough by day, are thus frequently transfigured at night. Look! this brilliant glowworm in your path!—certainly so appearing—but it proves to be only a mimetic fragment of clean, bare twig, saturated with the bright mycelium, though it would deceive a fire-fly.

That was an observant poet, by-the-way, who jotted down the following episode in his night stroll:

"Among the crooked lanes, on every hedge,
The glowworm lights her gem, and through the dark
A moving radiance twinkles."

The last line is especially felicitous and graphic, and brings vividly to mind this animated spark down deep among the dewy grass.

"What!" says the oracle Pliny to the star-gazing husbandman, "standest thou staring still into the sky and holdest up thy nose aloft into the aire? Why searchest thou the course of starres? Hast thou not another brood-hen star, other Vergiliæ, I say, even before and under thy very feet? I mean those pretty glo-wormes. Surely these come duly at their set daies; these keep time with those of heaven, as if they were linked to that star by some neare affinitie in such sort as a man may resolve & hold for certaine, that engendered they be no otherwise but by the influence thereof, the very brood and chickens of the aforesaid hen." From all of which it may safely be inferred, at least, that these insects are a much more conspicuous feature in foreign fields than with us.

What a happy blending of natural and poetic truth have we in these lines of Coleridge!

“Many a glowworm in the shade
Lights up her love torch;”

for, like Hero, who lit her nightly torch to guide her fond Leander, even so the glowworm gives this bright token to her ardent flame hovering above the grass, the glowworm being in truth but the wingless mate of the fire-fly.

But in all our midnight stroll I have said comparatively little of the dew, yet in the whimses of the dew alone there is a sufficient invitation to “let the moon shine on thee in thy solitary walk.” The path of the night rambler is paved and illuminated with brilliants, and to the tyro in these fields seems especially decked out for the occasion. A sheen of iridescent silver flashes through the grass on right and left at every swing of the lantern, like a flitting phantom of a rainbow. The mazes of the spider festoon the grass in a drapery of diaphanous silver lace pendent in sparkling spans from clover head to grass tip, and enveloping the entire meadow beneath its glistening meshes. An answering pearly spangle greets your passage hither and yon from the wheel-shaped gossamers everywhere hung among the herbage, for nature crowns this airy marvel with a rare diadem. These innumerable “wheels of lace,” such as remain intact, are mostly invisible by day, except to a quiet searching eye, and the greater portion of their number are renewed or freshly brought into being during the twilight, and are quickly baptized with dew, every thread and strand strung with brilliants, suggesting a possible clew to the old-time popular belief that gossamers were “composed of dew burned by the sun.”

In the caprice of the various leaves in their attitude towards moisture there is much of interest; the fastidiousness of this leaf, the eager affinity of that, one appearing as dry as at midnoon, and another laved and revelling in the nocturnal bath. Here is the common plantain at our feet as wet as though fresh from

immersion, its dripping surface condensing the moisture in rivulets along its parallel veins, and conducting through the grooved stem a long and generous quaff to the parched earth at its root. Other leaves are clothed in a glistening sheen resembling hoarfrost; they flash a fugitive response to your lantern, and upon the slightest touch let fall their bright disguise and leave their surface dry. Another great lush leaf exhibits a strange contradiction of caprice, and seems hardly to know its own mind, its general surface appearing perfectly free from moisture, yet nursing its great crystal globe at every depression upon its uneven surface. Its moveless poise seems almost instinct with avarice. Its cup is brimful, and each silvery restless bead,

“Scarce touching where it lies,”

grows apace until the accumulated weight disturbs the equilibrium, which is the tremorous signal for a general release and a net-work of flashing rills.

Following the sound of the water in the runnel, a rare spectacle awaits us where the *Equisetum*, the plebeian “horse-tail,” or scouring-rush, of the daylight, now stands transfigured, a marvel of nature’s bijoutry, each whorl of its curved fringes drooping with its weight of gems, a mimic fountain worthy the court of any Faerie Queene, like that in Spenser’s “bower of bliss,”

“So pure and shiny that the silver flood
Through every channell running one might see.”

The freaks of dewy decoration seem endless in variety. The feathery tops of blooming grasses are all a-tangle with flashing spangles, while their drooping blades are often free from moisture, or perhaps upraised, hang a border along their edge, or pierce a solitary bead at their tips. Here is a bristling bed of fox-tail grass, an army of those “peaceful spears of the field,” each bearing aloft its glittering trophy unto the dawn. Why this seeming contradiction and violation of natural law as evinced in the case of



THE PENITENT "IMPATIENS."

the dripping plantain leaf already mentioned on the one hand, and in this erect dry blade of grass where the distillation seems to aspire aloft, often converging at the extreme apex, whence it floats away for aught I know? Let us descend beneath the hill to the borders of the pond, for here is a charmed spot. I have reserved it for the last,

the bright consummation, for it holds the crown-jewel of all this brilliant realm.

Every one knows the "jewel-weed," the bright reveller of the brook-side copse, with its golden "ear-drops" and luxuriant spray, murmurous haunt of humming-birds and humble-bees, the *Impatiens*, or *noli-me-tangere* of the French, the "touch-me-not" or "snapweed" of the loitering school-boy, with its touchy, jumping pods, popping even at a hard look or breath.

There has been some speculation concerning the more common christening of this pretty plant, the "jewel" not having yet disclosed itself, except in the "trinket-like blossom" and "silvery immersed leaf." But these unworthy conjectures may now be dismissed, for the jewel is a verity, a moonstone of the first water, until now in close keeping of the fairies, unless, as I half suspect, some wide-awake seer like myself long ago got a glimpse of it, and stood godfather at the happy christening; but if so he receives no credit in any botany that I have met. The night has kept his secret.

Let us lay our lantern amid the succulent stems here by the brook. What a lavish display of gems! Every leaf among the lush, translucent canopy, though apparently as dry as at high noon, now drooping low in a listless fashion, and bordered with its pendent array of pure limpid diamonds, a spectacle such as Aladdin might have awakened beneath his supernal lamp, but which finds few parallels in natural fields.

The analytic eye discovers minute glands along the edge of the leaf at the crenate points, and one or two on the stem, each of which seems possessed of some secret power of distillation denied to other plants. Whole beds of the *Impatiens* will sometimes be seen scintillating with their gems when little or no dew is discernible elsewhere.

The jewels first begin to show themselves at dusk, and at midnight have reached their full splendor.

There are many beautiful surprises among these dewy shadows, but none comparable to this tearful dell where the penitent *Impatiens* tells her beads.

But though the dial sleeps, the hours have flown. A long jaunt this for daylight folk. Already the "keen insistent hint of dawn" hovers above the eastern hill, and yet, lost in the absorbing panorama beneath our lantern, how much of the night's truest witchery have we passed without a tribute!—The balmy mist, the songs of dreaming birds, the flutter of wings unseen, the drone of beetles, the sly footfall among the dried leaves, the glowing eyes among the shadowy herbage, the thousand mysteries of scent and sound—one or all, each enters into that pleasant sense of new and welcome acquisition which now is ours. We return to our pillow conscious that in this night we have not only doubled our own possessions, but have won a supreme title to those of our neighbor, against which no litigation can prevail. We have explored a new world—a realm which we can look in the face on the morrow with an exchange of recognition impossible yesterday.





NIGHT WITCHERY

*“In such a night let me abroad remain
Till morning breaks and all's confused again.”*



HOW are the senses piqued and sharpened in the total darkness of the woods! For though the path of the midnight rambler, surprised beneath the lantern's glare, reveals an unknown world among the freaks of dewy vegetation—the nodding som-

nolence of leaf and blossom, the twinkling earth-stars bursting into bloom beneath the brooding galaxy for soft-winged nestling moths and poisoning murmurers—nevertheless, with all its strange surprises, for a full appreciation of the night's true witchery one must become a sympathetic element of its mysteries, and see the darkness unalloyed. With the light extinguished you now become a harmonious instead of a disturbing element. You are taken into confidence, and experience a new joy of sensation not found in your illuminated path, that speculative charm which Keats found in the haunt of the nightingale:

"Tender is the night,
 And haply the Queen-moon is on her throne,
 Clustered around by all her starry fays;
 But here there is no light
 Save what from heaven is with the breezes blown
 Through verdurous glooms and winding mossy ways.
 I cannot see what flowers are at my feet,
 Nor what soft incense hangs upon the boughs;
 But in embalmed darkness guess each sweet
 Wherewith the seasonable month endows
 The grass, the thicket, and the fruit-tree wild;
 White hawthorn, and the pastoral eglantine;
 Fast fading violets covered up in leaves;
 And mid-May's oldest child,
 The coming musk-rose, full of dewy wine,
 The murmurous haunt of bees on summer eves."

In the total darkness the eager pupils are restless, and the eyes roll in "fine frenzy" at the new importance of their companion faculties. Their occupation is gone. The ear and the nostril now take the watch, seeming possessed of a retina of their own, picturing facts and surrounding events which the jealous eye strives in vain to prove. In the dark woods you are conscious as never before of tension and muscular movement in your ears; they loom up in importance, as it were, and are pricked forward and backward like those of other alert but humbler beings. Unaided by the sight, they carry on a subtle analysis

of sound which seems independent of your reason—a slight augmented rustle among the wind-stirred leaves! the creaking of a limb! the soft burst of applause among the aspen leaves! a capricious patter of falling dew from the tree-tops, a snap of twig not precisely timed to your footfall, or a few inches too far removed therefrom; a falling object from the tree—an acorn, perhaps, were it not that for an inanimate thing it has rolled a foot too far upon the leaves! What events!

And so with your nose: you see with it. Now, if never before, it warrants its conspicuous position in your physiognomy, and becomes a member of utility as well as a luxurious ornament. In these midnight woods you follow your nose like a hound. It pilots the senses. Could this eclipsed eye ever have pictured more vividly the pungent copse of spice-wood through which you have just pressed, or that drooping branch of aromatic hickory which touched your shoulder, or that plume of tansy that now brushes against your elbow? Does our midnight poet affirm,

“I cannot see what flowers are at my feet?”

And why not, pray? This mint at your foot—is it spearmint, or peppermint, or horsemint, or pennyroyal? Your nose will tell you at a glance. The texture of the vaporous vault of the still midnight woods seems to the hungry, desperate eye marbled or party-colored with floating incense of odors.

“Where hast thou wandered, gentle gale, to find
The perfumes thou dost bring?

* * * * *

O'er the pale blossoms of the sassafras
And o'er the spice-bush spray,
Among the opening buds thy breathings pass,
And come embalmed away.”

You may sit in the ambrosial current upon some jutting rock or log, and take your fragrant quaffs as they glide by, each in its season—a whiff of arbutus, perhaps? how pink it smells! or an

odorous yellow hint of primrose soft and luscious—in the dark it seems to the nostril what melting marsh-mallow confection is to the tongue—or a spicy glimpse of colt'sfoot or wild-ginger. And so the



redolent procession passes, now a visible aroma of sweet-fern, followed by a perfumed vision of sweet-pyrolas, ground-nut, or smilacena, or a cool, phosphorescent scent of toadstool or soggy

wood, or the brown smell of mouldy loam. A misty messenger from the swamp without the woods now finds its way thither, borne on the pink breath of sweet azalea or visioned in the fragrant hint of clethra. And now it is the sweet-fern again. Yes, sweet-fern tinctured with a faint gamy scent that plays Tantalus to our taunted vision as we search the gloom for two beads of animated fox-fire, for Reynard has recently passed this way, or is even now threading through the fragrant underwood. And what is this—for let us be true to the integrity of these nocturnal zephyrs—this faint piquant suspicion which now sophisticates the wild bouquet, this pronounced acrimony—how the impetuous eyes now begin to roll!—this overwhelming, painful effluvium which now sweeps the wilds in annihilating conquest? How graphic! more real than life—caustic, saturating, mordant! Mephitis, I could trace thy shaggy portrait to a hair from that pictorial smell!

It is part of the poet's creed that all the sights and sounds of nature are, or ought to be, beautiful in their environment. Even the perfume of many a favorite blossom of the woods becomes unpleasantly oppressive in-doors. "The saunterer's apple not even the saunterer can eat in the house." The distant midnight baying of a hound is to many a night rambler a pleasant sound, though few perhaps have yet learned to "bathe their being" therein as Thoreau did—a feat which would seem more logical in relation to the skunk's accompaniment, many a midnight traveller having waded through the acrid, saturated mist in its evil premonition or trail.

It is true, however, that when only faintly perceived, the odor of Hosea Bigelow's "essence peddler" is not unpleasant. Nay, nay, my dainty damosel! turn not aside thy fastidious nostril, nor raise the spurning palm. How many times on a blustering winter's day hast thou nursed the rosy tip of that same delicate nose in the warm "Alaska sable" muff and found a pleasant pungency therein! Thus, in highly diluted doses, the odor of the "Alaska sable" is a not unpleasant occasional ingredient in the nocturnal nosegay. It is a sort of spice which brings alert variety in our midnight stroll.

The odor of the fox is readily detected by a keen nostril, especially at night. The noisomeness of the warren is distinctly perceptible where unperceived by day, and the taint is carried abroad in the ambling fur, the contaminated wake held in equilibrium, as it were, in the heavy mist. Even the tiny emerald lace-wing fly or the caddis-moth will sometimes thus leave its malodorous trail threading the maze of redolence in the mist; and the bronzy scented beetle will challenge your nostril as you loiter in the dark woods, perhaps within the course of its recent droning flight or in the neighborhood of its haunt upon oozy tree-trunk near by. Often have I trailed him like a hound, and captured him in his concealment in the fissured bark.

The bibulous convivialist welcomes a certain ambrosial nectar which mortals call a *pousse café*, but which is said to be of the gods, wherein the several tempting ingredients are so deftly decanted as to lie unblended in their fragrant equipoise for a full minute; how much longer, it has possibly never been permitted to reveal. Something of the same phenomenon is naturally demonstrated in the scented distillations of the dew. In the sheltered lowlands, when the night is still, the motley ingredients of this odorous tangle seem to find their equilibrium, and lie in strata, as it were. How the redolence of the witch-hazel revels in the mist, weaving itself into the pale fabric as it floats above the marsh! It is the most volatile incense which we shall meet in the moonlight glens, and seems to float like oil upon the denser air, laden with the heavy emanations of the swamp. You may walk with your nostrils tingling in its tide, and leave it high and dry as you sit to rest. I have noted the same fact with regard to the evening primrose, but fancy the perfume is less volatile than the Hamamælis, and occupies a lower plane. Here are veritable zones of varying humidity and temperature, each with its haunting fragrance, often capricious, and yet again quite constant in its recurrence. In a certain well-known glen, for instance, you will always pass through a fugitive stratum of meadow-rue or linden, or other faithful perfume for each season; in



another swampy fallow you may confidently expect the welcome of the elders or wild grape.

I remember a certain nook which in still August nights is redolent of clethra, that constant blossom of the swamp, though no shrubs are there to be seen by day: a tribute from the marshy pond far up the mist-hung brook, where the reedy borders are fringed with the densely blooming shrub, where the almond-scented fog floods the sedgy waters, and the herons wade among the grasses, half-veiled in the tintured tide. Here, too, the floating pond-weed claims its lowly plain below the mist, anointing the lily-pads in its aromatic perfume as its yellow blossom-clusters dance upon the ripples.

In another narrow glen the heavy distillation from the sloping chestnut woods always seems to pour, with annihilation of all subtle midnight odors. On the pasture slope above the wood the cool, stimulating exhalations of the mint follow your path, and linger till morn in the foggy hollows, while high up on the hill one seems suddenly to leave the dews and greet a whiff which brings a vision of the day—that “stratum of warm air” which quickened the happy muse of Thoreau in his “Moonlight Walk”—“a blast which has come up from the sultry plains of noon. It tells of the day, of sunny noontide hours and banks, of the laborer wiping his brow, and the bee humming amid flowers. It is an air in which work has been done—which men have breathed. It circulates about from wood-side to hill-side like a dog that has lost its master, now that the sun is gone.”

Though

“the restless day,
Expiring, lays the warbling world asleep,”

the night, too, hath its wary broods, that with illuminated eyes, like glowing head-lights, turn darkness into day, and know the teeming bird-chorus of the dawn only as a lullaby. Of such is the mystic whippoorwill. How few have seen the daylight tenement of this ominous wandering voice! And there's the mousing owl, on muffled wing, with fiery, flitting, curious eyes and

foreboding, tremulous wail; for it would seem that the bird of wisdom has not yet lived down the evil aspersion of its antique slanderers. "The scritch owl," says Pliny, "alwaies betokeneth some heavie newes, and is most execrable and accursed. In summe he is the very monster of the night, neither crying nor singing out cleare, but uttering a certaine heavie groane of doleful mourning, and therefore if it be seene to fly abroad in any place it prognosticateth some fearful misfortune;" a belief which still prevails quite commonly among credulous country-folk, to whom this nightly visitant in the orchard or maples is the signal for the direst foreboding. Poor maligned,

feathered grimalkin! What does he say to me here in the moonlight gloom of the woods, as he sits there in the shadow on the pine branch, his glowing eyes revealing all the mysteries of the darkness in their illuminated searching shafts, and now with alert poise and ears uppricked, his eyes quenched as he turns his head away towards the opening of the wood, filling

the leafy vault with the soft, tremulous cry? And what is this to the rightly informed ear but the message, not of "doleful mourning" and "heavie newes," but the same that is borne in the song of the thrush, the tidings rather of life and love, a wooing to the listening mate, whose echo answers with near and nearer response across the valley mist? How infinitely more musical and welcome, this witching nocturne of the owl, than the dismal midnight duo of his quadrupedal counterpart of the backyard fence, that yet brings no compensating terrors of superstition!

As in the owl we have our nocturnal puss of featherdom, so also in the dusky bat have we our winged mouse. We hear their nightly squeaking convocation in the loosened clapboards



of the shed or barn as we pass—or perhaps feel an occasional fanning of their pellicle wings even when the eye detects no sign of them in the gloom—this accepted type of blindness that chooses the dark hours for flight, that dodges with artful purpose against the stars, or in the blackest night fills its little red maw with the most agile insects caught on the wing! and this, too, under disadvantages that would seem rather discouraging, for if an ancient philosopher is to be believed, a most astounding feat of aerial acrobatics is here in progress under cover of the darkness. “She is the only bird that suckleth her little ones,” says my authority, “and these she will carry about her two at once, embracing them as she flieth,” the difficulties of which will be appreciated when we consider that the bat in reality “flieth” with her arms.

What deeds are doing beneath the winking stars! with the owls and wild-cats and martens mousing among the slumbering trees; the foxes, skunks, and weasels following their dark trails among the herbage, to the terror of the hares and the meadow-mice and low-cradled birds. Most of the feathered tribes have their heads beneath their wings, though a few, more wakeful than the rest, will sometimes anticipate the day in nocturnal minstrelsy. I have twice heard the veery-thrush uttering its weird call at midnight, and have been startled by the challenge of the oven-bird, from its mossy hut beneath the ledge—“TEACHER, TEACHER, TEACHER, TEACHER, TEACHER”—awakening the dreaming woods in its reverberating echoes. The chipping-sparrow occasionally sings at night, and the white-throated sparrow often dreams aloud. I have occasionally heard, also, the chewink and cat-bird, while the nighthawk, though neither a hawk nor, in spite of its name, as much a creature of the night as of the dawning and waning day, will sometimes amble from its prostrate perch upon the wall and take a turn aloft, making the welkin echo to its wild screech, and frightening the tree-tops with its swooping twang. I have often heard the drum of the partridge well into the small hours, and that feathered rogue, the yellow-breasted chat, once almost threw me prostrate in my dewy tracks in the woods as he screamed in

my shrinking ear, "Chick whew! get away!" like a very goblin; for there seemed no possible perch upon which the bird could have rested, and I failed to discern a flutter of feather.

With the exception of the katydids and the throbbing lyres of vesper tree-crickets or an occasional tree-toad, the woods, however, are usually comparatively silent at night. It is in the wet lowlands where we find the chief nocturnal activity. The midnight summer swamp or marshy-bordered pond is literally palpitating with a life unknown to sunlight; the rippling moon dancing a filigree attendance among the reeds, and speeding in wavy chase across the deeps peopled now with pouts and eels which the daylight angler would have sought in vain. The lizards' tails (*Saururus*) shake their drooping plumes with a tremor all inconsistent with the listless breeze. The pickerel-weeds stir with submerged life, and the quivering tips of the reeds betray the rude progress of the turtles towards the shore as they seek the sandy banks to pile their nests of eggs. The placid sleep of the pond is vexed with multitudinous tickle, marked by the spangling touches of the moonlight insect broods; of fluttering caddisflies now making their first essay with their new-found satin wings, emerging by the legion from their water-baskets or crystal mosaic tubes everywhere among the bordering shallows, while myriad ephemerae spread their pallid wings and dance their midnight revels, making merry through their short sunless day of life which perchance ends with the dawn. The musk-rat or the mink leads a long, silent, glittering trail across the glassy water, or with a splash at the brink sets the lily-pads and spatter-docks in gliding dance on the ripples, and starts upon their telltale chase across the pond a hundred gleaming circles at whose common centre, though hid in verdurous gloom at the bank, a random rifle-ball would surely win its sleek and dripping quarry, now crouched in muddy tracks with luckless prey of frog or tadpole.

What with the tremulous drool of the toads and the sprightly pipes of the hyla tree-toads here celebrating their nuptials in their native element, or, later, the trump and splash of the bull-frog, together with the rasping accompaniment of the cone-head

grasshopper imps among the sedges, the midnight swamp will sing in our ears till morning.

Then there is

“the loon’s weird laughter far away”

that comes up to us as we ascend the hill, the midge-cloud’s tingling hum which we left behind us as we entered the wood, where

“in a wailful choir the small gnats mourn,”

and the “blind” bat hovers yet, or the quawking chorus of the night-herons far down the misty river-bend, or the pumping of the bittern in the fen beyond, or it may be far beneath the valley fog—for many have heard the “stake-driver” but few shall locate the stake! Only once have I identified this strange nocturnal voice to be positively sure of it, and this, as it occasionally came across the placid midnight waters of Lake Winipiseogee, alternating or accompanied with the “loon’s wild whinny” from the distant shore, the while I floated alone in my boat as though poised in equilibrium between two limitless starlit skies, one above and one below, without a visible vestige of land save the great black rim of the distant shore to give prosaic source to the weird nocturnal duo.

I have said that the midnight forest is comparatively silent; but the stillest woods may be made to divulge strange secrets not vouchsafed to the ordinary night listener. In a recent romance by Mr. W. H. H. Murray, in which he touches incidentally upon woodcraft and the acute ear-sense of the Indian, I find the following note:

I have often been surprised at the many and strange sounds which may at times be heard by putting my ear flat to the sod or to the bark of trees. Even the sides of rocks are not dumb, but often resonant with noises of running waters, probably deep within. It would seem that every formation of matter had in some degree the characteristics of a whispering gallery, and that, were our ears only acute enough, we might hear all the sounds moving in the world.

Who has listened to the æolian-harp of the telegraph? What wondrous harmony is here wooed from the passing breeze, or almost from the calm air itself—or from some remote tempest, perhaps—and reverberated in cathedral tones to the ear laid close against the resonant, weather-seasoned pole! Did the reader ever listen close against the dead pine-tree and marvel at the sounds of teeming life thus disclosed within—life which knows no night nor day nor rest? Think you that the woodpecker in its snug cave aloft, or the squirrel in the hollow rail, has heard your stealthy footfall through its door-way? No; the tidings have come through turf and root and trunk, vibrated into their being. If you would know the haunting tenants of the silent beech by your side in the dark woods, lay your ear closely against its bark, when, if the trunk be roughly struck, the slightest movement within its heart is betrayed in the vibrant wood and conducted to your ear. More than once in my strolls have I thus listened beneath the flicker's hole, and heard the clinging claws apparently beneath the bark at my ear as the sharp head peered out from the little round door-way aloft.



“It is as when a family, your neighbors, return to an empty house after a long absence, and you hear the cheerful hum of voices and the laughter of children, and see the smoke from the kitchen fire. The doors are thrown open, the children go screaming through the hall. So the flicker dashes through the aisles of the grove, throws up a window here and cackles out of it, and then there, airing the house. It is as good as a house-warming to all Nature.”

THOREAU.



BIRDNOTES

*“Hard is the heart that loveth nought
In May, when all this mirth is wrought,
When he may on these braunches here
The small birdes singen clere
Thir blissful swete song piteous.”*

CHAUCER.



BIRDS

IN those perfect days of early
June, when

“Heaven tries the earth if it be in tune,
And over it softly her warm ear lays,”

what a grateful and multitudinous response
is hers in the choral of the birds! Begun
long before the dawn, to cease only with the
starlight, nor hardly then, for the vesper-spar-
row, the whippoorwill, the chat, and the owl
still hold the diminuendo for the awakening
auroral choir.

If it is true—and the poet but vitalizes
a natural law as pertinent to sound-waves
as to rippling water—that

“Thou canst not wave thy staff in air,
Or dip thy paddle in the lake,
But it carves the bow of beauty there,
And the ripples in rhymes the oar forsake,”

then what a bewildering maze is this pal-
pitating vault, where the very haze seems all
a tremor to the trilling throats!

The April breeze brings hope and aspiration on its wings, of which this bright June morning is the supreme fulfilment. And yet in the rapt enjoyment of this perfect day, when former darker days seem past belief, and the future knows no dread, how little are we wont to recognize the claims of the birds for the rare enchantment which is ours! An isolated note here and there—the song of an oriole in the elm, or perhaps the sputtering challenge of the wren in the cornice cranny above—accentuates the wondrous symphony, and as a distinct feature wins our passing appreciation. But what of the welling under-harmony which fills the earth and sky, and buoys us thither unaware? For though laden with fragrance of sweetest flowers, and borne from a paradise of blossoming fields, that were a false and barren breeze of June which bore no message from the birds. What are the tidings which they help to bring?

“We may shut our eyes, but we cannot help knowing
 That skies are clear and grass is growing.
 The breeze comes whispering in our ear
 That dandelions are blossoming near,
 That maize has sprouted, that streams are flowing,
 That the river is bluer than the sky,
 That the robin is plastering his house hard by:
 And if the breeze kept the good news back!
 We could guess it by yon heifer's lowing—
 And hark! how clear bold chanticleer,
 Warmed with the new wine of the year,
 Tells all in his lusty crowing!”

Thus, like the “clarion” of the cock, one by one some familiar note accentuates the musical murmur, and we are willing to accept the passing whim that the robin or the oriole, the song-sparrow or the bluebird, “tells it all” and “makes the summer.”

For several years every succeeding June has found me in the fulfilment of this ideal *dolce far niente* which our poet describes, reclining in my hammock beneath my cottage porch, my fancy floating hither and yon at the beck and call of warble and per-

fume. And yet, as in the buzzing insect din of the August fields, how few of us ever seek to analyze the units of the complex unison! Here is this great bird-symphony which fills the June morning of a continent with unceasing harmony, while only the notes of a few prominent performers are relieved against the vast perspective of sound. Our own immediate choir extends even to the horizon's brim, many of these perfectly audible ripples of sound doubtless finding their vocal centre on the hill a half a mile or more away: all intermingled and entangled, and though never arrested or swerved in their course, only an occasional note more penetrating than the rest reaching our imperfect ears unbroken; while from the nearer woods below, the neighboring orchard, the meadow, and the sky, each contributes its faithful voice to the ever-precious medley.

Few people would seem to master the art of seeing with their ears—perceiving, locating the precise source of sound—for the analytical resources of the second sense are not fully appreciated. The eye may view the panorama as a unit, and yet revel in its elements at will. Even so the ear, while sensitive to the unison, may resolve the same to its units of sound. Indeed, a trained musical ear detects, almost without effort, the various parts in a harmony, while an immortal Beethoven, even though humanly deaf, traces from the music of his exalted interior vision the elements of a vast overwhelming unison, apportioning to each crude instrumentalist the orchestral score by which less favored humanity may hear the echo of that divine inspiration. In a more modest degree, this analytical power may be brought to bear upon the oratorio of the birds.

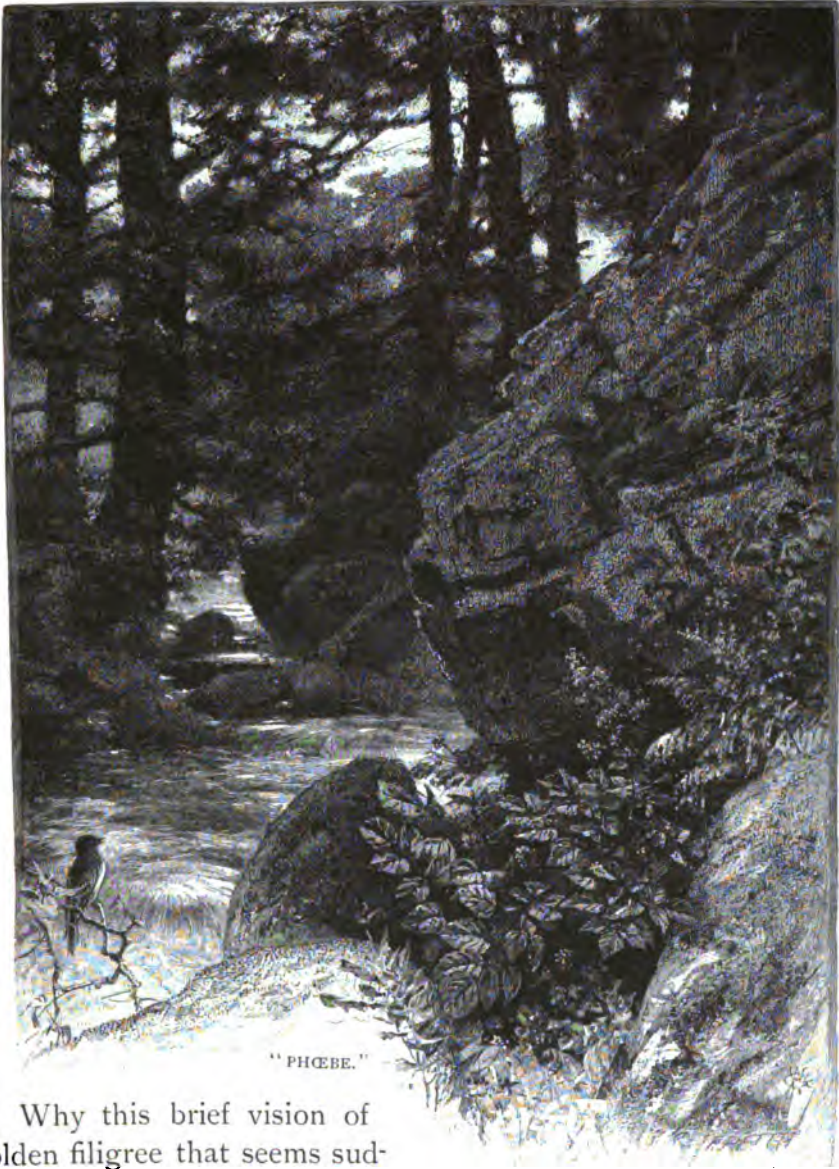
On these June mornings I have repeatedly asked my more or less ornithological friend to name such individual songs as he can detect, the result being generally a list of from seven to ten of the more prominent vocalists, prominent generally because of their proximity. "Do you know the song of the purple finch?" I ask. "Yes, perfectly," is the reply. "Can you not hear it now almost continually?" But careful listening fails to detect the song. Focus your ear on the summit of yonder spruce by the

road, and be deaf to your robin and wren. The song reveals itself instantly, and is readily caught thereafter.

Sitting thus with closed eyes and ears alert almost any bright morning in early June, a few minutes' patience rewards me with the distinct identification of the following elements of song, verified from careful notes which tally year by year—what a revelation to the pilgrim from city walls, where the scolding of the garrulous sparrows in the ivy, the occasional scream of the night-hawk, the cooing of the pigeon, and, perhaps, an occasional profane parrot, have summed up the ornithological inspiration!—robin, bobolink, wood-thrush, cat-bird, oriole, orchard oriole, meadow-lark, wren, kingbird, brown thrush, Wilson's thrush, red-eyed vireo, warbling vireo, white-eyed vireo, yellow-hammer, chewink, rose-breasted grosbeak, purple finch, song-sparrow, yellow winged sparrow, chipping-sparrow, field-sparrow, bluebird, phœbe, yellow warbler, swallow, goldfinch, quail, nighthawk, and crow. Nor are these all, incredulous reader. My list is confined only to those songs which are more or less *incessant* in my merry medley. I have omitted the tanager, the grackle, the indigo-bird, the red-start, and others, whose notes either occasionally reach my ears or are involved in doubt, to say nothing of the owl and whippoorwill, with their duet lullaby of the twilight.

And what an endless diversion, this picturesque, kaleidoscopic music, this pastoral opera, every fresh recognition bringing its vision of some favorite feathered songster, each with its welcome of personal reminiscence!

The fringe of wood beneath the hill sends up its faithful complement through the rippling maze of song, in which the weird call of the veery, the bell of the wood-thrush, and the challenge of the chewink form a more or less interrupted trio, occasionally silenced by the piercing note of the meadow-lark or the whistle of the quail, while again the resonant tattoo of the yellow-hammer rings from its hollow tree, or that coaxing, cooing note now fills some momentary lull:—how are the flashes of golden wing, the pearly lucent eggs, the old bleached limb and all, embodied in that pictorial sound—"wick, wick, wick, wick, wick!"



"PHOEBE."

Why this brief vision of golden filigree that seems suddenly flung across my fancy?

What is the talisman? "I've *cheated* ye, per *chick* o pee, per *chick* o pee." What but the tiny goldfinch that has passed overhead in its looping flight, festooning the ether in glancing drapery of black and gold, each embroidered loop pinned with a wisp of song! The crimson tufts of the thistle-blooms now seem hovering there, or in magic fruition, the silvery down glistens in the

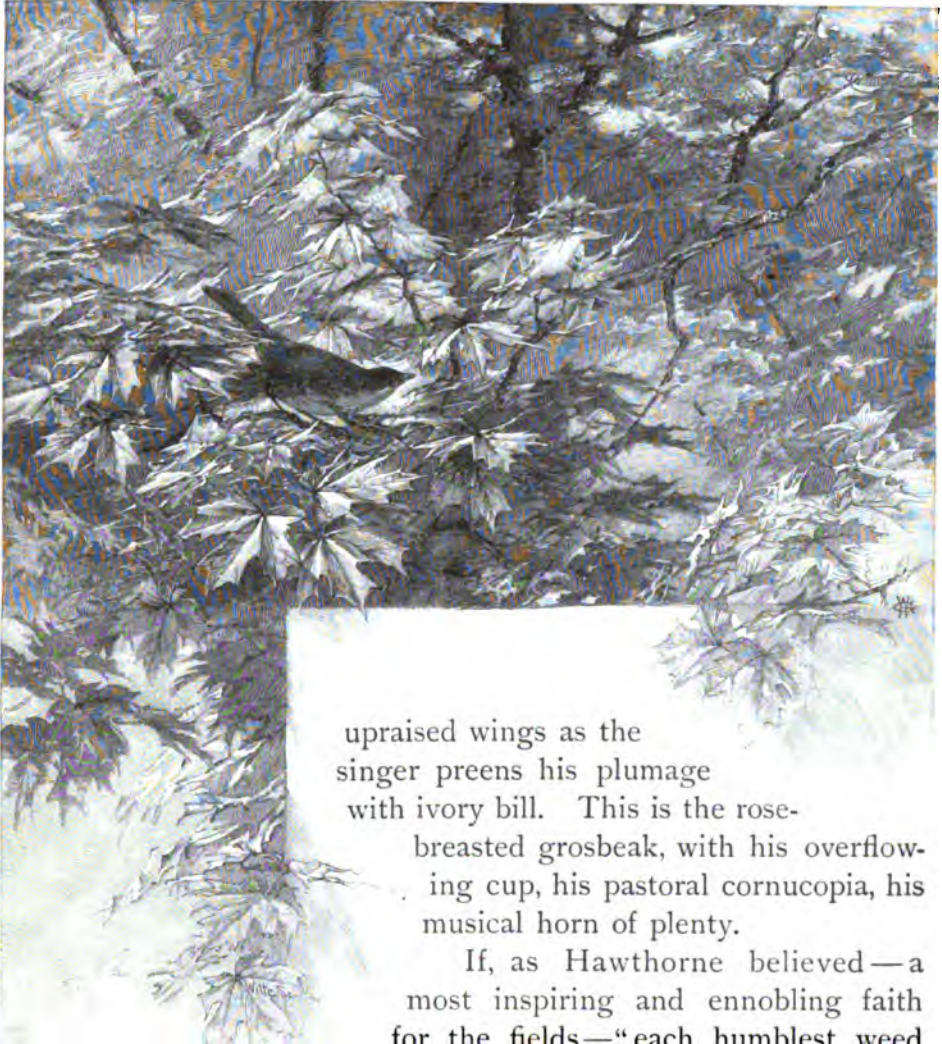
airy eddies, for are not all the meadow-thistles following him?
Now gleams a sunflash from some familiar glassy pond, as

“the thin-winged swallow, skating on the air,”

leaves a brief token of twitter in exchange for a buzzing fly that erewhile hovered beneath the porch.

And now the soft breeze seems laden with a new enchantment. A shadow falls upon my closed eyes, and the scent of grass and clover gives place to the cool hint of hemlock, and tinctured mould, and pungent spikenard roots, and mossy trickling rocks; I hear the gurgling of the brook and the sounds of a rumbling bridge, and all seem dancing attendance on a vague, mossy nest somewhere stowed away; for has not that brief call of “Phœbe!” spoken for all from the barn beyond?

Hark, from the apple-tree in the field below, that note so full and ripe and mellow! “A robin,” say you? No; nor an oriole. There is a distinct individuality in that song, which, while suggesting both these birds, still differentiates it in many respects as the superior to either, as though from a fuller throat, a more ample vocal source. It is one of the rarest, choicest voices among all our feathered songsters, in *timbre* and volume surpassing the thrush, and in these qualities unequalled, I think, by any of our birds. Listen to the overflowing measure of its melody! How comparatively few the notes, and yet how telling!—no single tone lost, no superficial intricacies. Sensuous, and suffused with color, it is like a rich, pulpy, luscious, pink-cheeked tropic fruit rendered into sound. Such would seem the irresistible figure as I listen with closed eyes to the welling notes—a figure entirely independent of, though certainly sustained in, the ornithological form pictured in the song, sitting quietly on an upper twig, with full plump breast as carmine-cheeked as the autumn apples now promised in the swelling blossom calyxes among which it so quietly nestles. I can see the jetty head, and quills splashed with silvery white, and the intervals of song seemed spanned with rosy light as pure as the prism released from those



upraised wings as the singer preens his plumage with ivory bill. This is the rose-breasted grosbeak, with his overflowing cup, his pastoral cornucopia, his musical horn of plenty.

If, as Hawthorne believed—a most inspiring and ennobling faith for the fields—“each humblest weed stands there to express some thought or mood of ours, and yet how long it stands in vain,” what shall be said of

the conscious, buoyant, throbbing singing-birds? “How many human aspirations are realized in their free holiday lives, and how many suggestions to the poet in their flight and song!” How many are the burdens lifted on their wings and dissipated in their music, whose mysterious message has brought peace!

“Verily verily: you *know* it: you *see* it: cheery are *wé*: we *cheer* you” —such is the melodious witness that seems to descend

“THE PREACHER.”

from heaven through the maple-tree above us. "You are weary: we *see* it: listen to *mé*: meekly: cheery are *wé*: O why *is* it: verily verily: *this* is it: holy spirit: devoteé: verily verily: there we owe it: *believe* me: 'tis *real*: we *know* it: *Selah!*"

It is the voice of the "preacher" celebrating his matins in his temple of the tree-top, and filling the morning with unremitting praise and counsel—the most sustained and tireless song, and the most communicative voice among all our birds. No other one of them speaks so clearly in our own tongue, or seems so much to imply a listener. As will be seen, the song is not a rapid, elusive warble. It is a deliberate, continuous recitative rather than a song, each phrase followed by a distinct pause, and each pause seeming to formulate with an oracular effect the brief passage which follows, all of which are variously accented and full of variety of inflection, as I have endeavored to indicate.

Often have I sat by the hour beneath his shrine, and long is the list of mellifluous exclamations, exhortations, texts, and precepts which I have caught from his votive throat. On one occasion alone I filled my page, and though he had been in continuous song for exactly three-quarters of an hour, I left him ere he had reached his "secondly."

Bringing my testimony to date, I can add furthermore that during last July, subsequent to the writing of the above in a magazine article, he surpassed himself in eloquence. At that time I occupied my summer studio in the woods. He had me at an advantage and did most commendable missionary work. On one particular morning, at nine o'clock, he greeted me with his "listen to me" and "there we owe it"; and having thus voiced his theme, preached without ceasing until half-past twelve, at which hour, when I left for luncheon, he was yet undiminished in unction, and apparently no nearer the benediction than when he announced his text.

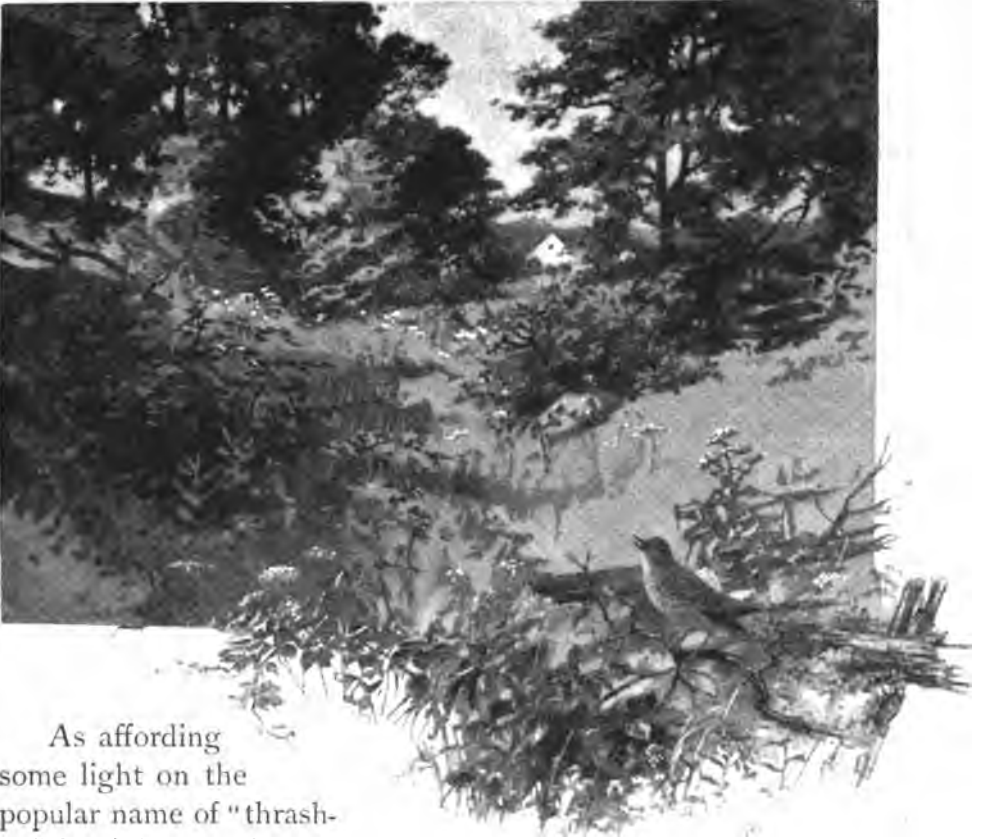
I have said that he speaks the human tongue, and in partial proof thereof I may mention that long before I knew of our red-eyed vireo's title of "Preacher"—given, I believe, by Wilson Flagg—I had noted down the "you know it" and "you see it"

which he quotes from the tree-top singer, while further incontestable evidence of the bird's orthodoxy is given in another portion of this volume.

What else our *ornithological* bird is doing up there in the tree-top is shown in the following from Nuttall: "For all the while that this chorus enchants the hearer, the singer is casually hopping from spray to spray in quest of his active or crawling prey; and if a cessation occurs in his untiring lay, it is occasioned by the caterpillar or fly he has just captured"—which recalls a *bonmot* in relation to the bird which I once heard from Mr. Beecher, who remarked to me upon his piazza at "Bosco-bel," while his fancy hovered aloft in the maples, "That little fellow has found a land of plenty up there, and he says grace like a little Christian at every mouthful."

The world had long been wondering what tidings lay within the robin's song that should carry the same joyous message to all, until an inspired poet told us. Were we, then, deaf never to have heard those words before: "Cheerily, cheer up! cheer up! Cheerily, cheerily, cheer up!" It is not every one of our birds, however, that has found such an interpreter as he who has given us this most beautiful and perfect onomatopœia; but there are many songs which, whether as sympathetically rendered or not, have nevertheless been so aptly paraphrased as to afford their ready recognition. There is the brown thrasher, for instance, whose stray notes reach our ears from the grassy road yonder. In Concord, we learn, he was wont to superintend the spring planting—of beans, perhaps—with lively interest and counsel. "Drop it, drop it; cover it up, cover it up; pull it up, pull it up, pull it up!" in perfect Anglo-Saxon. Over the border in Connecticut, I can vouch for his somewhat similar strain, while farmers everywhere will recognize that faithful voice of the pasture, that curt and comprehensive summons from the tangled lane, always associated with the brown furrows of the cornfield and the time of blooming dog-woods:

"Shuck it, shuck it; sow it, sow it;
Plough it, plough it; hoe it, hoe it!"



As affording some light on the popular name of "thrasher," I might mention the

remark of a certain matter-of-fact rustic who answered my query for enlightenment on the subject. "Some fokes sez it's becuz he's aliz a-thrashin' around so in the bushes, 'n' others sez it's becuz he's ferever tellin' uv' em to '*thrash it, thrash it!*' But that's all puppy-cut; he *sez ennything you like.*" What would this unconverted heretic say to the "Peverly bird," that won this local christening as a tribute from a perplexed husbandman hesitating at his choice of crops:—"Sow *wheat*, Peverly, Peverly"—a refrain which is vouched for by many discriminating listeners. Yet there are other heretics who aver that this is all "puppy-cut," and that the little white-throated sparrow in reality voiced a reproof to old Peverly which he wouldn't own:—"All day whittling, whittling, whittling."

There are few happier, more unmistakable, transcripts from bird notes than in that line of Emerson's:

"The redwing flutes his 'O ka lee.'"

In this brief transcript have we not an epitome of the sentinel-starling, scarlet epaulets, sable uniform, precious magazine of spotted eggs and all? In the "Conk-a-ree" so often found among the pages of Thoreau's spring notes we have an equally felicitous reminiscence of this tenant of the bog. Such is the challenge that comes to you across the spatter-docks, the tussocks, and the alders almost any day in May. With either key you will find your bird; and yet I am satisfied from dearly bought experience that a closer intimacy with the source of the sound reveals a certain subtle, soggy, boggy regurgitation which is missed in both of them—echoes caught from a safe distance. There is more of the gurgle and the wet ooze in it—"Gl-oogl-eee" is the distinct, uncolored utterance with which patience in a sheltered, knee-deep mud-hole will reward you after the "quit, quit" has subsided among the cat-tails and the willows.

Who could not name the Maryland yellow-throat from the challenge caught by Burroughs as he loitered in the bushy retreat of the bird—"Which way, sir? which way, sir? which way, sir?" or his "Teacher, teacher, teacher, teacher" of the woods, known else as the oven-bird; or his bluebird, whose warble he calls "the violet of sound," and which says "Purity, purity" to him and evermore to us all? But, alas! how are our senses attuned to our moods! or is this "drearily, drearily" among the flying leaves of November in truth the same song which we heard in April?

Among these incessant spring roundels you certainly have not failed to note that occasional piercing shaft of song which seems to cleave the air straight from the hill-side meadow beyond—"I see; I see you." Who needs to prowl among fence-rails to discover that black crescent breast and tapering bill of the meadow-lark, the young sportsman's tempting target, and the playful "*cache, cache*" of the little French folk of our Acadian country?

Not a few of our common birds have been self-christened, and are at one in the popular as well as the scientific vocabularies. The phœbe, chickadee, chebec, chewink, towhee, pewee, and Bob White need no printed plate or page for their identification. Nor does the whippoorwill, known throughout the continent by its weird nocturnal cry. Indeed, how little else than this uncanny "wandering voice" of the bird is known to the popular mind! How many a rural octogenarian will you find who has ever seen the strange, wide-eyed, mottled bird that from earliest memory, perhaps, has made its nightly haunt upon his well-sweep or even the domestic door-sill?

The penny trumpet of the nuthatch occasionally takes up its tiny part in the orchestral score from the maple above the house. "Quah, quah," says Thoreau; but the "Yank, yank" of Burroughs is certainly more truly caught, not only in its phonetic quality, but in its suggestiveness of that prying, tugging bill among the scales and crevices of bark.

I am not aware that poet or ornithological stenographer has yet transcribed the vocal performance of the wren—those "five notes to wanst," as the Hibernian listener once observed (and pat it was in truth)—being certainly very discouraging to such an undertaking. And there is another of our bird songs scarcely less disheartening in its intricacy. How have the bird historians and poets labored in its whirling rapids—cast their hooks and nets, as it were, to catch the bursting bubbles in its rippling wake! Listen! that pell-mell, gushing rhapsody from the meadow below—a sextet, with obligato and piccolo variations—all from a single throat. Can it be possible, indeed, that yonder sable minstrel swaying on the dock is alone responsible for all this Babel? Hark! a moment more and he will find his breath again. There! "Bob o' *link* o' *loo* o' happy go lucky O lucky." Such is often the introductory refrain, once or twice repeated, with a brief interval. But who shall follow the subsequent vocal revelations? Even though possible of analysis by the ear, would it not take six pens in simultaneous effort to chronicle? Who knows what unsuspected melody may not be submerged in that

tiny impulsive torrent? The temperate guide of the music-box cylinder yields a long and pleasing strain to the ear; but what is the chaos when from defective machinery that barrel is permitted to revolve its circuit in a few seconds! Such is the parallel always suggested by this song of the bobolink. I feel that beneath all that dizzy tintinnabulary some rare melody is smothered. O Bob! what precious strain might we not disclose to the world could we but control the wild spring impulse within your breast and put a fly-wheel on your vocal machinery!

From time to time through a long period of years I have added an occasional note or two to my singular vocabulary caught from this meadow doggerel—a syllable here, a word there, from my trip across the meadow, a few more from my covert by the stone wall, or a whole string of them as I lay beneath the elder-bush, while the minstrel swayed upon the blossomed roof overhead. Certain notes would seem easily translatable, almost as though implying an Anglo-Saxon intention on the part of the bird, but others can only be phonetically suggested. Here is the list, copied from my random notes covering a number of years. And what a *pot-pourri* they make when strung together, with occasional interpolations for sequence!

“Bob o’ *link* o’ love o’ lucky o’ linkum o’ linkum a jingle a jingle a ditty bob for bonny Missus Linkum see see keep an eye up here my sweet see see hear me tinkle tinkle sprinkle such a liquid mellow glee wet your whistle bob temperance O gush a gurgle scatter splatter such a carol as she alone can follow follow pipe it pipe it bob O tintinnabulate for temperance temperance whink a seeble seeble here I go across the clover sprink a jinkle sprinkle treble burst a bubble purl a babble gabble glee shake it out upon the meadow chink a link a wheedle see look’ee look’ee ninkum ninkum deacon yonder see yessir yessir funny fellow he whew *whew* but I must seek a rest for my cap is coming off and I can hardly keep my jacket on *whew* temperance temperance.”

But why attempt the impossible? Why add another to the many parodies of this elusive meadow song? The phonograph

alone shall resolve that performance to its elements and render us its units of sound. Not until thus secured, and his phonetic "cylinder" then slowly revolved for analysis, shall we learn what Robert has so long been guarding from our ears beneath all this vocal acrobatics.

Many friends of Mr. Beecher will recall his "bobolink" jargon, with which he was wont "to set the table on a roar," and in whose mad whirl this half-drowned ingredient of "temperance" occasionally struggled to the surface. And I note that Burroughs also has detected in the song this same token of rebellious conscience, while, whether from anticipation or not, my own ears have certainly discerned something very like it interspersed with Pickwickian effect—catching at straws, as it were—in the tide of this exuberant, bubbling effervescence.

How have the poets followed Bob afield, eavesdropping in his domain, but while they have occasionally reflected his ecstatic spirit, who among them has brought back his voice? The robin, the bluebird, the chickadee, and various other birds have found their stenographers, but not Bobolink.

Bryant's well-known poem makes only a slight attempt at onomatopœia, while in Wilson Flagg's noted tribute to the bird I find a much more satisfying and accurate presentation both in spirit and phonetic suggestion of song. We all remember that delightful chapter in which Irving evolves a touching moral to birds and boys through this his favorite "joy of the meadows," and our page can readily bear a repetition of that true bit of portraiture by Lowell, as voiced in the provincial tongue of Hosea Biglow:

"June's bridesman, poet o' the year,
Gladness on wings, the bobolink is here;
Half hid in tip-top apple-bloom he sings,
Or climbs against the breeze with quiverin' wings,
Or, givin' way to 't in a mock despair,
Runs down a brook o' laughter thro' the air."

That last line is worth a whole page of phonetics, and recalls that wonderful parallel passage of Thoreau's—to me the most



THE BOBOLINK AT HOME.

felicitous effort within my knowledge of similar descriptive literature. What keenness of perception, subtle appreciation of tone quality, and literary art are embodied in that remarkable paragraph! How does it revive that eager anticipation quickened by the first notes of the song—a prelude promise which Bob never fulfils—that

“Single note, so sweet and low,
Like a full heart’s overflow;
But which we fail to hear again.”

“I hear the note of the bobolink concealed in the top of an apple-tree behind me. Though this bird’s full strain is ordinarily somewhat trivial, this one seems meditating a strain as yet unheard in meadow or orchard. *Paulo majora canamus*. He is just touching the string of his theorbo, his glassichord, his water-organ—and one or two notes globe themselves and fall in liquid bubbles from his tuning throat. It is as if he touched his harp within a vase of liquid melody, and when he lifted it out the notes fell like bubbles from the trembling strings. Methinks they are the most liquidly sweet and melodious sounds I ever heard. They are as refreshing to my ear as the first distant tinkling and gurgling of a rill to the thirsty man. Oh never advance further in your art, never let us hear your full strain, sir! But away he launches, and the meadow is all bespattered with melody.”

It matters not that the English dictionary affords us no tidings of the “glassichord” or “water-organ.” The dictionary is inadequate to the occasion, for these are the veritable instruments of the bobolink prelude as truly as that last line is the epitome of the musical cascade which follows.

But it was reserved for Florence Percy to give us our rollicking, “devil-may-care Bob” as we all know him—an interpreter who, presenting the bird under the character of “the tell-tale,” has infused the very mischief of that “wild and saucy song” into her page. Who that has noted that suggestive, self-suffused, ecstatic strut of the gay Romeo, as with drooping wings and

circling pirouette he waltzes about his little brown mate down there in the grass, will not recognize the portrait? What does the saucy banterer say to the startled sparrow "warbling his wedding tune" in supposed seclusion?

"Balancing on a blackberry brier,
The bobolink sung with his heart on fire:
'Chink? If you wish to kiss her, do!
Do it, do it, you coward you!
Kiss her! kiss kiss her! who will see?
Only we three, we three, we three!'"

And when the little pair sought a safer retreat:

"Again beside them the tempter went,
Keeping the thread of his argument:
'Kiss her! kiss her! chink-a-chee chee.
I'll not mention it; don't mind me!
I'll be sentinel—I can see
All around from this tall birch-tree!"
But ah! they noted, nor deemed it strange,
In his rollicking chorus a trifling change.
'Do it, do it!' with might and main
Warbled the telltale—'do it again!'"

Bryant has given us a hint of Bob's apparel:

"Robert of Lincoln is gayly drest,
Wearing a bright black wedding-coat;
White are his shoulders and white his crest."

A "wedding" dress, in poetic fancy as well as in fact; for the full-grown fledgling in the tussock nest would scarcely recognize the courtly sire of its pin-feather days. This festive costume is assumed only at the mating season, a sort of sympathetic outward expression of the ornamental vocal accomplishment, for both subside in company.

During the month of July the sobering process is conspicuous,

while in August you will seek in vain for your bobolink, though the meadow be full of them.

This Protean accomplishment of the bird has led to much misconception, not only in the popular mind, but among the ornithologists as well, the dual guise suggesting two distinct species, a common supposition even yet among those who have not witnessed the metamorphosis. Bob, moreover, pays a severe penalty in this relinquishment of his merry motley of cap and bells.

In his annual September migrations, from Maine to Florida, he runs the gantlet of the gourmand guns aimed at those two prospective bites from his plump breast; for whether as "reed-bird" in Pennsylvania or "rice-bird" in Louisiana, the appearance of his flocks is a whet to the epicurean appetite and to wholesale slaughter. Go to our market-stalls, not only in the South, but here in the very haunt where his song has barely ceased in the meadows, and see the sickening traffic in these plucked and mangled little bodies. "Reed-birds, twenty-five cents a bunch!" Alas! there would seem to be a hundred of our population who enjoy their bobolinks *on toast* to one who realizes the song that will be forever missed.

My hill-top piazza affords a rare opportunity for observing the aerial play of the nighthawks. Regularly every afternoon, in the interval between four o'clock and sunset, they awake from their day-dozing, and one by one join the revellers aloft—now climbing the heavens with rapid spiral flight, whence with a sudden dip and folded wings they plunge headlong down, down, as though to dive into the glassy mill-pond in the valley below; and now, with a sweeping curve of magnificent grace and proportions, skimming the tree-tops in buoyant upward glide, while we catch the vibrant twang of the cleaving wings.

How has that mysterious sound puzzled the investigators! What is its source? I have attributed it to the wings; but all of our ornithologists have had their guess at this "boom," as it is called. Wilson Flagg apparently considered it a vocal effort, as implied in his remark that "it utters a singular note, resembling the twang of a viol string." Others have laid the sound to the

door of that "capacious mouth while passing through the air." Wilson so inferred, and significantly compared the noise to that produced "by blowing strongly into the bung-hole of an empty hogshead." Audubon, I believe, was the first to suspect the wings of the bird as the resonant source, presumably the long quill vanes; and there would seem to be many circumstances to verify his conjecture, the sudden horizontal tilt of the wings which determines the upward finish of the swoop, and which is always simultaneous with the "boom," tending to reinforce his theory. The fact which I have discovered, that a fair imitation of the sound can be produced by blowing between the leaves of a book, loosely held, would seem to suggest a similar vibratory origin.

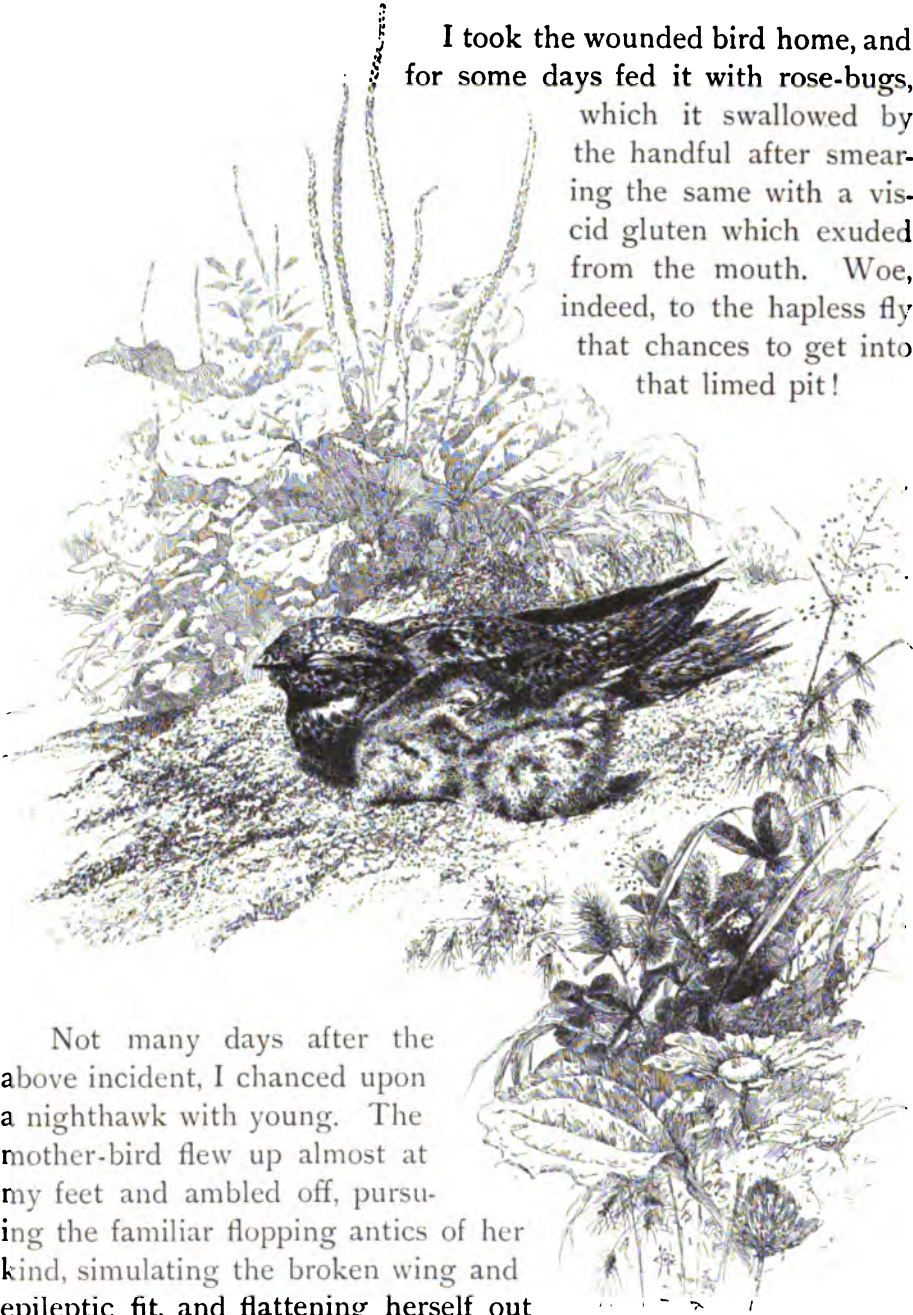
On two occasions, moreover, I have observed a quite similar, though, of course, diminished sound, produced by swallows, and in both cases unquestionably proceeding from the wings and during a quick curvet of flight as they dove about the "well-dissembled fly" which I swung aloft from my fishing-rod.

I have never attempted the test, but have often wondered whether a nighthawk's wing, skilfully adjusted to a slender fishing-rod and swept through the air, might not be made to give forth that veritable twang!

Once, while passing through a pasture, I almost stepped upon what appeared to be an irregular piece of bark which had fallen from a neighboring fence-rail. It lay there in the grass, and only the effect of exact symmetry in form, accentuated by the white spots upon its pinions, dispelled the illusion—for it was a nighthawk. The position of the bird showed at once something unusual. According to its habit, by day, its eyes were closed to a mere crevice. Half-supposing the bird to be dead, I stooped to pick it up, but only to be met with an angry flutter, the bird darting at me, showing the full interior of his throat and uttering a hoarse screech, while the black depths of the now widely opened eyes simultaneously lit up with a lurid rosy glare. This was repeated at my slightest movement towards the wounded bird, for I soon discerned that its wing was broken, presumably a cruel penalty for a heedless swoop against a telegraph-wire overhead.

I took the wounded bird home, and for some days fed it with rose-bugs, which it swallowed by the handful after smearing the same with a viscid gluten which exuded from the mouth. Woe, indeed, to the hapless fly that chances to get into that limed pit!

Not many days after the above incident, I chanced upon a nighthawk with young. The mother-bird flew up almost at my feet and ambled off, pursuing the familiar flopping antics of her kind, simulating the broken wing and epileptic fit, and flattening herself out on the stone wall, followed precisely the same manœuvres which I had often noticed in her congener, the whippoorwill, under



similar circumstances; the same waddling uneasy squat, with out-stretched wings and staring eyes. Observing that the bird had risen from a small, flat, lichen-tufted rock, I intently focused my eye for those anticipated animated bits of moss in the shape of fledglings, and soon differentiated from the bed of lichen their fuzzy identity. They were not *brown*, as Wilson says, but suggested a tufty spot of gray mould not only in color but in melting cloudy quality, its edge on the one side seeming to vanish, while on the other mainly manifest by relief against its shadow on the rock. The callow twins were presumably about two days old, and the wisdom of their singular flat build now seemed perfectly attested, as they hugged close and motionless to their bed. Thus they appeared when first observed, their inherited instinct teaching them the perfect safety of their disguise and the prudence of quiescence. The immediate surprise being over, however, the two sluggish, sleepy-eyed innocents were suddenly transformed. With surprising agility they were both on their feet, and with out-stretched necks and comical skinny wings high upraised, they made quick time for the bordering jungle of grasses. The sudden appearance of these long fuzzy elbowed flippers seemed like hocus pocus, for the downy sides give no hint of their presence. When headed off and returned to their original nest—for the nest of the nighthawk is simply a hollow, among lichen worn by the nesting bird—the outlandish little babes became quite docile, following my out-stretched finger with wide-open mouths and quivering flippers, and uttering weak, high-keyed plaints somewhat suggestive of the comfortable whispering interchange beneath the brooding hen in the coop.

In the night I revisited the scene, with the intention of kidnapping this interesting family—a fool's errand, it might be said, knowing full well that those same sleepy, half-closed eyes which at noontide would delude you to steal a hand upon that boozy sphinx upon the wall are now inviting all the visible darkness to their full round depths. Remembering, however, the mesmeric effect of the "jack-light" upon other nocturnal game, I concluded to test the effect of my dark-lantern's glare upon my bird.

Creeping close to the spot already carefully located, the rock soon gleamed in the full light of my bull's-eye; but it was only after several minutes of the closest scrutiny that the form of the bird gradually assumed shape mysterious and sphinx-like as she brooded her downy fledglings. Can I ever forget these soft, deep, round black eyes, motionlessly staring into the glare now held close before her face? I had come to lay hands upon her, but now with her form within easy reach, and my hand in eager spread, I was vanquished.

For a period, I know not how long, I crouched in the shadow of my lantern, my face barely two feet from the statuesque form of this strange bird; and although intent on her capture, yet in the soft, unwinking, all-observing stare of those great mild eyes, I confess to a mesmeric charm that stayed my eager hand. At last, in a momentary triumph of prosaic scientific fervor, I made a clutch for my prize—but presto! my open fingers only arched above an empty void which soon disclosed the two downy sleeping sphinxlets manifest only by touch. The parent bird had seemingly spirited herself into air, and in the mood of the moment such seemed the fitting denouement.

Only by feeling could the two chicks be found. The light of the lantern failed to locate them even then, except by the shadows which they cast. Though apparently asleep, they were, in truth, keenly awake, for after the lapse of a minute or so they were up and on their feet, pursuing the same acts as at mid-day, running off into the grass with surprising agility for two babes rudely awakened from the cradle, uttering the familiar plaintive peep which, with the fleeting shadows accompanying them, afforded the only means of following their imperceptible identity. Foreseeing the danger both to mother and young from a too eager clutch, and having little confidence in my alertness against such odds of vision and hocus pocus, I returned home, and after allowing the bird ample time to get herself together again, I revisited the scene, provided with a butterfly net. Again stealing upon the bird as before, and without permitting myself to be brought beneath her spell, I lost no time in clapping the net

over her, and thus secured the whole queer family. I took them home, and on the following morning made the studies from which the accompanying pen-drawing was perfected. The mother-bird seemed to be oblivious to all but her two hungry babes, brooding them and uttering a low hoarse croak, to which they always responded. The young became very tame, and manifested a degree of hunger entirely consistent with their cavernous resources, pursuing my finger with open mouths whose capacity seemed to reach the core of their being. From whichever side I approached, these two comical little creatures came for me precipitately, with pleading, upraised wings and gaping mouths.

In the so-called "drumming" of the ruffed grouse, that soft murmurous tattoo by which his ardent lordship musters his little company of willing captives, we have another familiar sound as yet as much wrapped in mystery as the "boom" of the nighthawk. How felicitously Trowbridge revives this exciting reminiscence of the woods:

"The partridge beats his throbbing drum."

But he leaves us to surmise the nature of that "drum" which has so long puzzled the world. Wilson, though a professional natural observer, from whom a more specific account might have been expected, is equally non-committal. "The bird strikes with stiffened wings in short, quick strokes," he says, with perfect safety. Elliot is equally guarded in his observation that the drummer "beats swiftly downward." Burroughs, however, is more to the point, and assures us that the bird strikes "its own proud breast," which tallies with the authority of Audubon, who discovered that the wings "beat the sides of the bird." Bryant is of the same opinion; so is Peabody, and a host of others, though Burroughs, I believe, later changed his view.

Earlier naturalists, too numerous to recount, however, have definitely located this mysterious drum, the hollow "drumming-log" having long been considered a necessary adjunct to this muffled roll. Such has been the most commonly accepted theory, seemingly abetted by the bird itself, from its singular preference



for a fallen log as the seat of the musical performance. Even the sporting authorities are so convinced, one recent prominent writer asserting that "if the bird happens to find a dry, well-

placed log his tattoo can be heard a *mile*." Since, however, it has been repeatedly discovered that the mysterious resonant flutter is accomplished equally as well upon a rock, or even upon the bare ground, the "drumming-log" theory has lost favor. Now appears a conservative coterie who would seem desirous of conciliating the disputants, while determined to be on the winning side anyhow; Brewer, for instance, who claims that the bird "beats its sides and the log" simultaneously, a belief which is shared by Samuels and many followers.

Against this I would oppose the witness of another unprofessional but equally close observer, the writer, in truth, who deposes and says that the bird does nothing of the kind; that in the one instance, though brief, where its movements were observed by him, the clearly defined limit of the visible whir of the wings seen from behind demonstrated that no feather of the bird's wing touched the body or the log upon which the bird stood; while, on the other hand, the feathery halo almost merged over the back, suggesting a new possibility in the resonant source.

Not to be outdone by the opposing diplomatists, here we find another class who would seem to rest their case in the artful non-committal of Wilson, claiming to connect his negative suggestion above with the positive statement that the bird "strikes nothing but the *air*."

Following the suggestion intimated from my own observation opens up a new line of investigation. Here is the testimony of Wilson Flagg, for instance: "Whenever I have gained sight of a partridge in the act of drumming, he seemed to elevate his wings and strike them together over his back, increasing the rapidity of the strokes," etc.

But Thoreau long anticipated him, as witness the following from his journal for the year 1855, in which he chronicles the discovery of a neighbor who was wont to prove his assertions: "He had seen a partridge drum standing on a wall; said it stood very upright, and produced the sound by striking its wings together *behind its back*, as a *cock often does*, but did not strike the wall or its body. This he is sure of, and declares that he

is mistaken who affirms the contrary, though it were Audubon himself."

This is the utterance of conviction, and its unqualified transcript in Thoreau's page adds almost the value of his indorsement.

Nor is this all the mystery connected with the "drummer."

There is almost as wide a difference of opinion concerning the attitude of the performer as there is in relation to his technique. We may take our choice between position erect, as in the instance last mentioned, which is verified by many authorities; or horizontal, as described by Elliot, while Audubon leaves us to take our choice, simply assuring us that the bird "stretches himself out" during the process. Some say that his head is thrown back towards the tail, others that it is lowered. Indeed no two grouse would seem to follow the same professional method. Here is certainly an opportunity for some investigator to distinguish himself. The authorities are all at sixes and sevens on the matter, and so long as the mere eye-memory is the only witness the riddle will still remain unsolved. The musical flutter of the grouse will continue to hoodwink the human eye.

We have all seen ocular demonstration of otherwise occult facts through the revelations of the Muybridge photographs of animals in motion—the astonishing transitory attitudes of trotting horse, kicking mule, jumping dog, and even the flight of birds—picturing what would seem anatomical impossibilities. What a chance for the "snap-shot" camera in this rapid manœuvre of the grouse! I am not aware that the bird will drum in captivity. Who, then, among our amateurs with the camera will pit his wits against the shy mysterious drummer in his own haunts, and bring away his secret in the unimpeachable photograph? Why not an artful screen, fortified with camera, by the side of that favorite "drumming-log"? Such has been a long-brooding plan of mine, but as yet unfulfilled.

Whatever the final verdict shall be, the writer is serenely confident that if this muffled roll of the grouse demands anything beyond the atmosphere as its drum, it will prove to be chanticleer who gives the key-note to his gallinaceous tribe as he "claps

his wings at dawn." Yet here again, what wonder that the elusive whirl of the partridge should have defied analysis, when no less an authority than the peerless Audubon himself was deceived even in the moderate performance of the clumsy rooster—or can it be that all the rest of us are blind?—for does he not tell us that the grouse "beats his *sides* after the manner of the *domestic cock*"? I recall also the parallel lines from the "Summer-day" of Hume, where the "crested bird" is again misrepresented:

"With gilded eyes and open wings,
The cock his courage shows;
With claps of joy his breast he dings,
And twenty times he crows."

This will be news to many a country boy who knows the clumsy antics of his pet "Shanghai."

We all know the "drummer"; many of us have heard the "drumming," but who will show us the *drum*?



*“O Birds, your perfect virtues bring,
Your song, your forms, your rhythmic flight,
Your manners for the heart's delight,
Nestle in hedge, or barn, or roof.
Here weave your chamber weather proof;
Forgive our harms, and condescend
To man, as to a lubber friend,
And, generous, teach his awkward race
Courage, and probity, and grace!”*

EMERSON.



BIRD CRADLES

*“Of birdes nests,
Ye source of all thir armonie.”*



THAT is but a superficial student of ornithology who is content to know his birds by the mere specific characters of anatomy, plumage, and egg; who shoots his bird, and names the dead body afterwards by the analytical key—a songless ornithology. Even though he shall name his specimen at a glance—Latin tag and all—he may yet have less *ornithology* in his soul than his unlettered country cousin—the old miller, perhaps, who will tell us that “the hang-bird has been there on such a morning, unravelling his bagging or stealing his tie string;” who will point out to us “the teeter-bird that picks the water-bugs from the wet stones for his long-legged fuzzy young uns;” or the “little brown chap with speckled breast that builds a nest jest like

an oven, year after year, down yonder among the weeds below the mill, and calls 'queeche, queeche' every time I look out of the window." Does he not *know* his birds, even though he might fail to identify their skins?

Even the amusing testimony of the savants of the French Academy who presented to Cuvier for identification a description of a certain "red fish that walked backward" is not without its distinct value. "Of course," replied the naturalist instantly, "you mean a crab, though it is not a fish, neither is it red, nor does it walk backward." The learned tyro would at least show his "fish" where he found it in its native element, and though his vision appears to have been somewhat askew, his was a worthier aim and attitude than the other extreme of exact science which has to do merely with museum specimens, with a ready list of synonyms in place of an inspiring reminiscence, with wire and tow as a substitute for animation and song. "A bird in the hand is worth two in the bush" is a pagan motto for the ornithologist. "The bird is not in its ounces and inches," says Emerson, "but in its relations to nature; and the skin or skeleton you show me is no more a heron than a heap of ashes into which his body has been reduced is Dante or Washington." The true ornithologist knows his bird in the bush before he converts it into a specimen; and to truly know his bird in its bush he must have been admitted to its *home*. Neither the color of the plumage nor the shape and decoration of its egg, while so essential in the scientific classification of the bird, are any index to its conscious being—the true bird. Bobolink doffs his white cap, not from desire or volition, but because he can't help it. These functions are fulfilled in spite of the bird and are beyond his control, while even the finer attributes of habits and song may be said to be scarcely less spontaneous and automatic.

Not so the nest—the home, the cradle. In these exquisite fabrics, materializations of the supreme aspirations in the life of the bird, we have at once a key to its mind, an epitome of its loves, its hope, solicitude, providence, its individuality, its energy,

caution, intelligence, reason and economy, discrimination, taste, fancy, even its caprice and whim, almost of its humor.

In their arts we may learn something of their mental resources, even as the antiquary discovers in the remnant decorated relics of an extinct people testimonies not disclosed by the mummy. To know the nidification and nest life of a bird is to get the cream of its history. We may snap our fingers at vocabularies and synonyms.

Even an empty nest is still eloquent with interest. A few of them have been gathered about me as I write; and how beautiful they are! Here is one picked up at random. Not a rare specimen from the tropics, but an every-day affair of our country walks. What an interesting study of ways and means and confident skill! Hung by its edge from a horizontal fork of a maple twig, with a third of its circumference unsupported, it is yet so boldly wrought that this very span shall serve as the perch of the parent bird. Its edge is plainly compressed, though barely depressed, by evident continual use, and considering the nature of the materials at this portion its stability was perfectly insured. What nice discrimination in the



choice of strands by which the nest is anchored to the swinging bough, its support being almost entirely dependent upon a certain brown silk from the cocoon spider (*Argiope Riparia*).

Often in my rambles have I pulled this floss from its round tough cocoon suspended among the weeds, and wondered whether the arts might not yet prove its utility! And here it is, adjusted with artful design just where its need is most apparent and its strength recommends it, lapping and overlapping the forks, and extending across the span from twig to twig, where it is interwoven and twisted with strong strips of bark and long wisps from the stalk of the milk-weed or similar hempen substance. The economy of this spider silk is manifest in all the five nests of this kind which are before me, and while it appears occasionally lower down in the structure, these outcroppings prove to be only the ends of the loops which encompass the twig and are securely anchored among the interwoven meshes of the fabric. The reliance of the bird on the strength of this material would seem perfectly plain, for in the nests wherein it is largely employed much fewer strands of bark are passed about the twigs than when the inferior white cobweb is used at this point of support—a fact which I have often noticed.

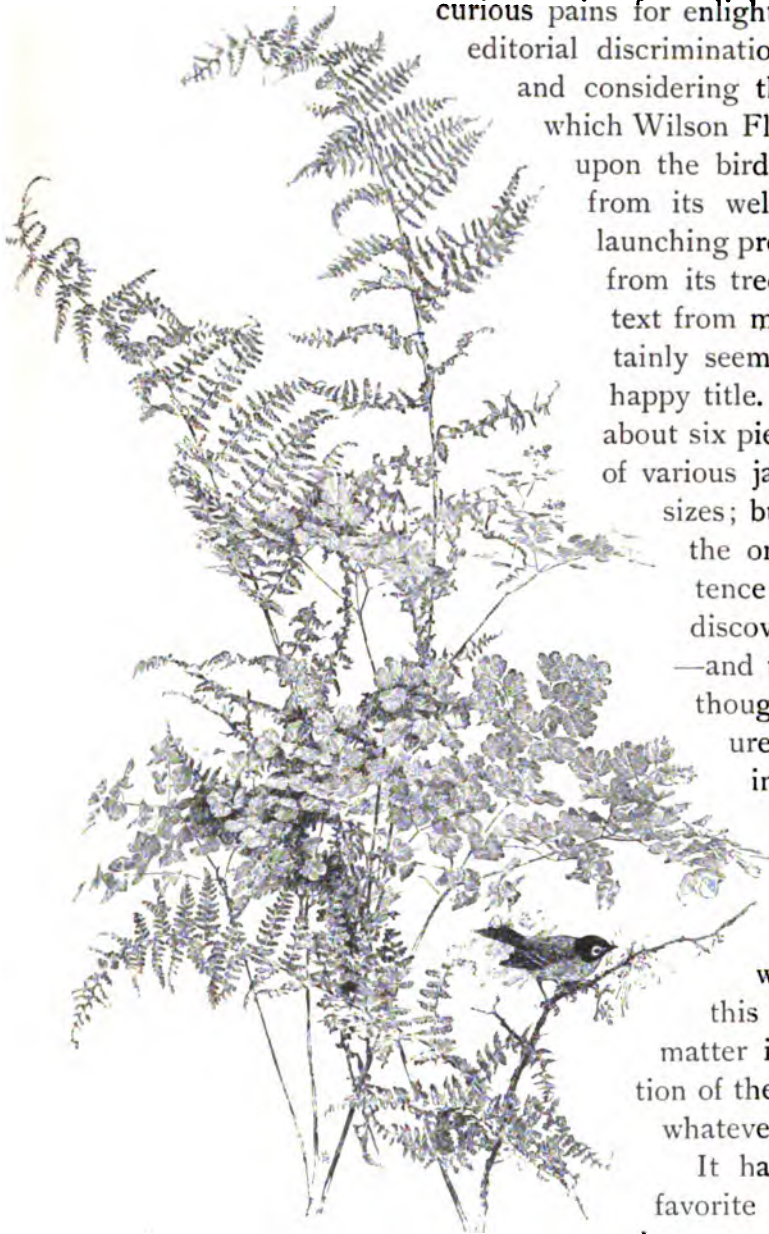
The cobweb element forms an important amalgam in the nests of all the vireos, of which the above will be recognized as a specimen. Laid on in snowy tufts, or artfully twisted into fine threads—I cannot believe this twisting to be accidental—meshed about the basket framework or drawn across some precious bit of hornet's nest or glistening yellow birch-bark or newspaper clipping, or hung below in fluffy tassels, it is a recognized badge of this particular tribe of feathered architects, whose pendent nests are among the most picturesque of all our birds. The hereditary art of nidification of the vireos has probably suffered little change through the ages. As a rule their nests, unlike those of other pensile builders, are wrought from Nature's own raw materials, and, even as we generally find them, might have been constructed a thousand miles from the haunts of man or a thousand years ago. And yet, in one particular respect, it must be admitted, the

nest often betrays the degenerating human contact. It is an admitted fact that many of the vireos manifest a strange fascination for the newspaper, fragments of which are often a conspicuous contamination in their motley fabrics, composed most commonly of generous strips of white and yellow birch, hornet's nest, dried leaves, grape-vine bark, asclepias hemp, bits of wood and pith, and various other ingredients.

It was this well-known propensity of the bird that won it the name of "the Politician" from an ornithological friend of Wilson; an appellation especially given to the white-eyed vireo, although from my experience the others are equally deserving of the soft impeachment.

How often have I paused in the woods to study the strange ingredients of these vireos' nests, of which I have dissected at least a hundred, in many of which the newspaper had formed an element. And why is it that I am always led with such eager quest—yes, even at the risk of life and limb on one occasion—to scan these ragged, weather-beaten fragments of print, as though consulting the oracle! 'Tis true they usually disclose but little intrinsic reason for their conspicuous preferment, though I *do* remember one or two exceptional instances; once in my boyhood, when I enjoyed a great laugh at the disclosures of one such literary fragment, the precise nature of which has escaped me, save that it was an advertisement having a comical relation to the bird world. But my memory is distinct of having brought the editorial selection home in my pocket, where it was subsequently forgotten and reduced to pi among the jack-knives, buttons, jack-stones, and other usual concomitants of the small boy's outfit. The nest I well remember. It was suspended in a small thicket and variously supported by the bend of a bramble and stalks of hardhack and meadow-rue. I did not see the birds, as the nest was abandoned, and though not a typical vireo's nest, it was so conspicuously decked out with editorials and advertisements that, out of respect to Wilson, I was constrained to accept it as a bad case of "the Politician."

It has remained for the red-eyed vireo, however, to reward my



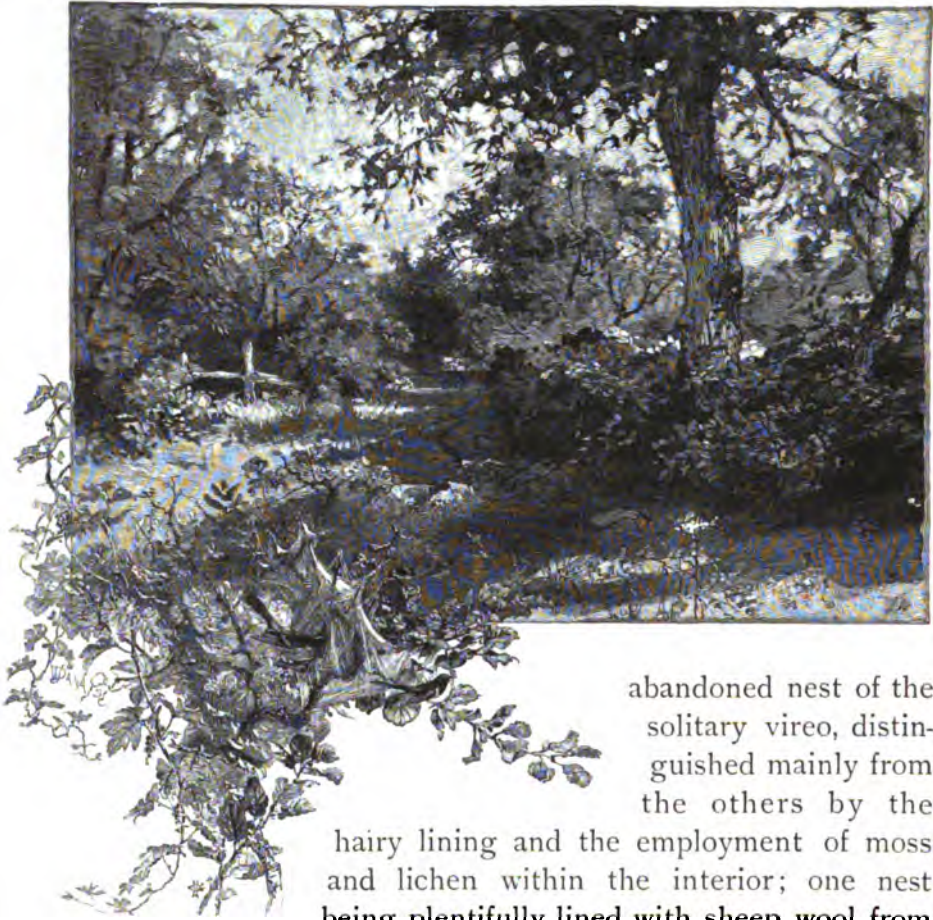
curious pains for enlightenment as to the editorial discrimination of these nests, and considering the popular name which Wilson Flagg has bestowed upon the bird, "the Preacher," from its well-known habit of launching precepts by the hour from its tree-top pulpit—the text from my nest would certainly seem to reinforce his happy title. In this nest are about six pieces of newspaper, of various jagged shapes and sizes; but among them all the only complete sentence anywhere to be discovered in the print—and this appearing as though obviously treasured—is the following: "*Have in view the will of God.*"

And yet I suppose there are those who would affirm that this selection was a matter in which the volition of the bird had no part whatever!

It has always been a favorite pastime with me, in my autumn walks, this dissecting of abandoned nests of all kinds, then disclosed to view in the denuded woods—this unravelling of the warp and woof of these nature-woven fabrics, extracting the secrets of the downy

bed of warblers, analyzing the queer components in the hollow of a stump, picking apart the felted masses in deserted woodpeckers' dens, since plainly occupied by chickadee, creeper, bluebird, nut-hatch, or crested flycatcher, and disclosing by the aid of a magnifier a wide variety of curious textile elements. How endless and whimsical the choice of building materials for which Nature has been laid in tribute by the bird, from the tree-top cradles of the orioles to the soft feather-beds of the wrens, the curled-hair mattress of the chipping-sparrow, the basket cribs of the starlings among the rushes, the mossy snuggeries of the oven-bird, and the adobe of swallow, phœbe, and robin, with their various preferences of pine-roots, bark, strings, feathers, hornet's nest, caterpillar hairs, wool, skeletonized leaves, cobwebs, spider-egg tufts, fur of various animals, pappus of seeds of all sorts—dandelion, thistle, cat-tail willow—gleaned from the thickets, the trees, the air, the barn-yard, the stable, the poultry-yard, even from your vestibule door-mat or window-sill.

The individual preferences of a few of our more common birds afford a number of interesting facts. "When I want a horse-hair for my compass-sight," says Thoreau, "I must go to the stable; but the hair-bird, with her sharp eyes, goes to the road." The nest of the chipping-sparrow is commonly lined with horse-hair, a fact which has won the name of hair-bird to the species; although several others of the sparrows, notably the field-sparrow and song-sparrow, are equally partial to this particular carpet for their nursery. Burroughs recounts the bold incident of a sparrow picking a hair from the body of a horse. Who ever sees a coon-hair in the woods? And yet here is the solitary vireo that gleans in the crafty trail of that animal, through fern and brier and hollow logs, and rarely fails to feather her nest with the soft fur. What is the secret of this peculiar preference? In the wilder regions of the country the hair of the deer is also said to be a common substitute or accompaniment. Certain observers claim that the red-eyed vireo has an occasional fancy for squirrel-hair, which is sometimes found in considerable quantities in its nest. I have found what I have assumed to be the



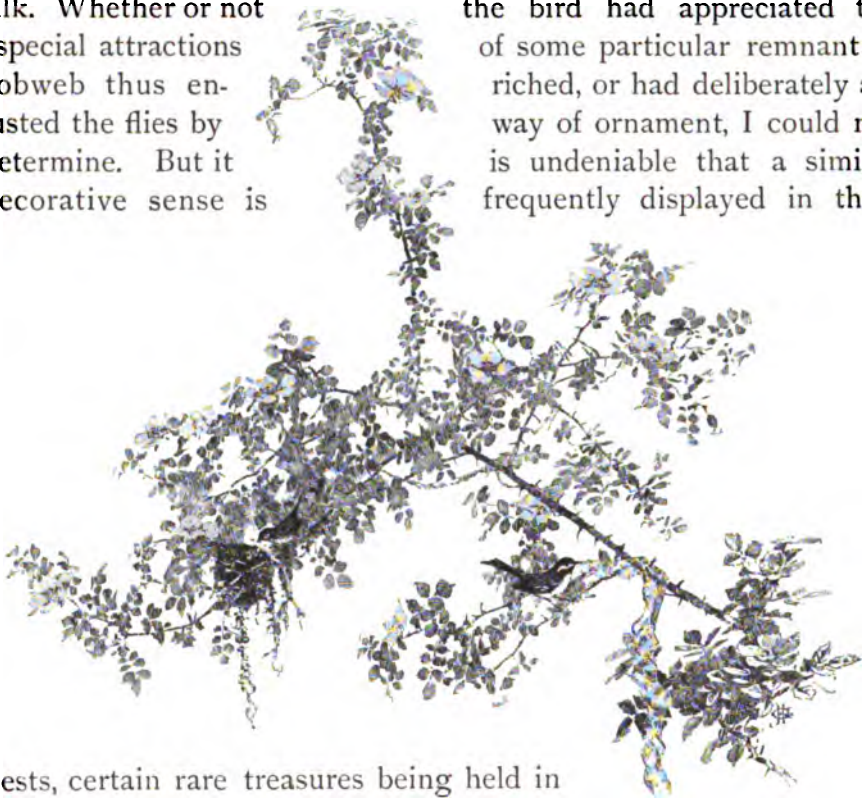
abandoned nest of the solitary vireo, distinguished mainly from the others by the hairy lining and the employment of moss and lichen within the interior; one nest being plentifully lined with sheep wool from a neighboring pasture. The snow-bunting would be at a loss in its boreal nest without the fur of the arctic fox. Various of these cradle-building ingredients readily recommend their utility in the qualities of strength, pliability, warmth, etc., while others again are only to be accounted for on the hypothesis of the passing whim or humor of the builder. Twigs, strips of tough bark, string, wiry roots, grass, spider silk, cocoons, vegetable strands of one kind and another, all appeal to our sense of the fitness of things, but what special advantage is indicated in the following instances of caprice? Here is the worm-eating warbler, for instance, whose nest is seldom free from dried hickory and chestnut

catkins. The oven-bird's hut is generally intermeshed with fruiting stems of urn moss, with their dried spore-caps. The Nashville warbler is partial to a mesh of pine needles and horse-hair; while the purple finch considers hog-bristles and horse-hair a more suitable compound. The Kentucky warbler, and various other warblers, show a preference for the pith of weeds. Perhaps the prairie warbler has discovered some rare virtue in cast-off caterpillar skins that ordinary humanity cannot guess, its nest, I am told, usually showing a penchant towards this singular ingredient.

But this bird is not alone in this odd choice, of which others of the warblers and the vireos occasionally avail themselves. In addition to spider silk, and cocoon silk, I have discovered evidences that the web-tent of the apple-tree caterpillar is occasionally raided for material, having identified numbers of the caterpillar skins among the web meshes of the vireos and redstart. The oriole visits the web-nest too, but on a different errand for her cradle. I once observed one of these birds mysteriously prying about one of these tents. It left me hardly time to guess its object, but quickly thrust its head through the silken walls and took its pick of the fattest caterpillars in the squirming interior, carrying them to what it evidently considered as more appropriate surroundings in the hang-nest above. I once found a nest of the red-eye which exhibited a marked entomological preference, being composed largely of the hairy cocoons of the small tussock-moth, and conspicuously decorated with a hundred or more of the black skins of the *antiopa* caterpillar, of all ages. What a singular waste of energy one would naturally think was here revealed in the search for a material which at best must be a rare ingredient in the wild gleaning. But the inference does injustice to the bird's intelligence. Assuming that there is an advantage in the material, and granting the bird even a school-boy's knowledge of the habits of a conspicuous insect, few substances could be acquired at a less expense of time than these withered skins; for the caterpillars of the *antiopa* live in swarms of hundreds, sometimes of thousands, in the elms and swamp-willows, and

leave their black, spiny, cast-off skins—of all their five periodic moults—attached to the denuded branches upon which the larvæ have fed.

In another amusing specimen I found a large piece of hornet's nest, four inches broad, arranged as a pendant, and dangling from this a string of brilliants that glittered like emeralds, and which proved to be three dead blue-bottle flies entangled in spider silk. Whether or not the bird had appreciated the especial attractions of some particular remnant of cobweb thus enriched, or had deliberately adjusted the flies by way of ornament, I could not determine. But it is undeniable that a similar decorative sense is frequently displayed in their



nests, certain rare treasures being held in reserve for finishing touches of adornment, even as I once actually witnessed the careful adjustment of a bright green iridescent feather of a peacock beneath a pendent nest in a rose-bush just outside the closed blinds of my room. What twitterings of congratulation, mutual suggestion, and experimental touches ere the dainty prize found its final setting!

In the same bush I discovered, later, a small narrow wisp of lace, abandoned to the antagonism of the thorns, though not

without obvious evidences of struggle and disappointment—fresh commentary on a well known text in proverbial philosophy.

There is obvious wisdom in the use of cocoons and hornets' nests, so much sought after by pensile builders—compact, tough fabrics in themselves, they are naturally chosen for their strength. But it is not easy to explain, on any grounds of utility, the uncanny discrimination of the great crested flycatcher, whose nest in the hollow tree would seem to demand no thought for other qualities than softness and warmth. Once, in my boyhood, while investigating the fascinating hollow in an old willow-tree, where I had once surprised a day-doing owl, I found the familiar matted felt at the bottom largely intermixed with fragments of snake-skin. Knowing the habits of snakes in the casting of their skins, having once or twice found them in the grass, I fell to wondering whether it could be a common practice of the black snake or "racer" to climb a tree for the purpose of exuviation. Later on the mystery was solved, having learned in my ornithology that the great crested flycatcher considered the snake-skin the *ne plus ultra* of nest-linings. The nidification of this bird usually takes place in the deserted retreat of the woodpecker, and is seldom without its complement of one or more snake-skins, which are frequently interwoven in a bed of hog-bristles and feathers, rather indicating a peculiar fancy for *exuvia*.

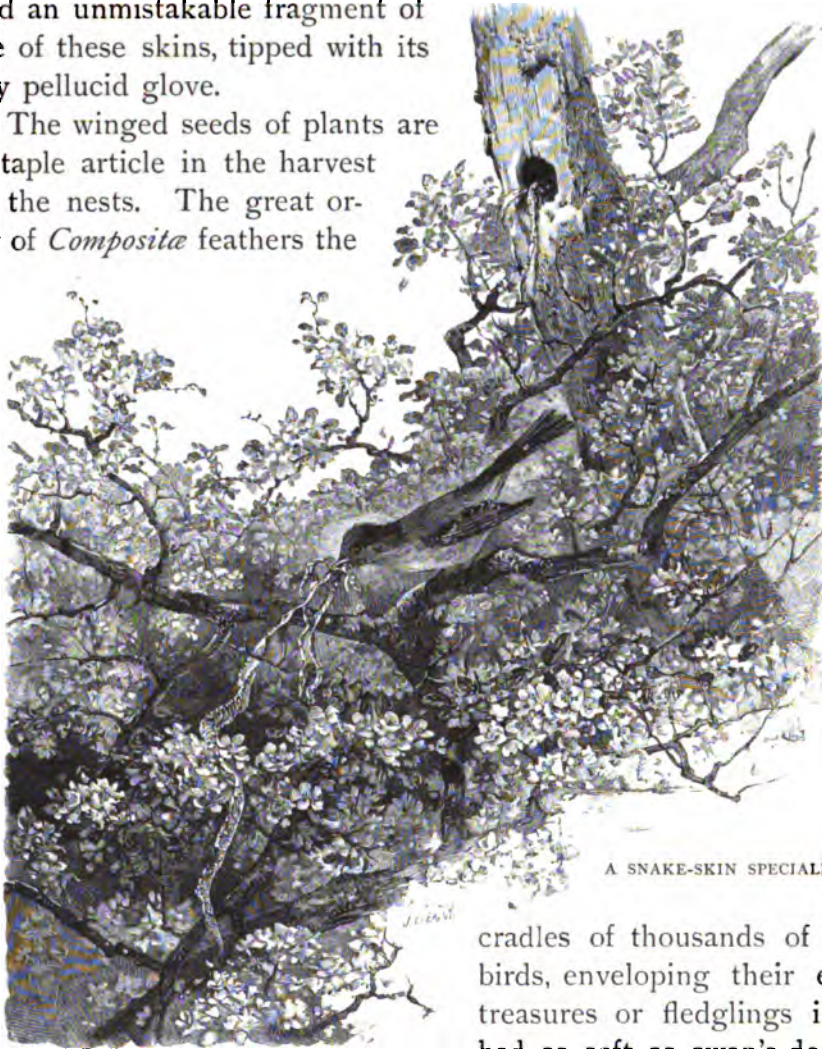
But here, again, who knows but what some stray vireo's nest—those catch-alls, samplers of nature's nest-textiles—may not have given the flycatcher the hint. I have a vireo's nest in my possession which is largely composed of snake-skins, and they are frequently thus found.

The purple finch, according to some authorities, is addicted to a similar whim occasionally. Of course either of these exceptional cases may represent nothing more than a successful raid on some abandoned nest of the flycatcher.

The toad is said to habitually swallow its cast-off skin, in which case the red-eye must have once surprised him in the gastronomic act, for in one of my analyses of these nests I discov-

ered an unmistakable fragment of one of these skins, tipped with its tiny pellucid glove.

The winged seeds of plants are a staple article in the harvest for the nests. The great order of *Compositæ* feathers the



A SNAKE-SKIN SPECIALIST.

cradles of thousands of our birds, enveloping their egg-treasures or fledglings in a bed as soft as swan's-down; the plummy seeds of thistle, milk-weed, dandelion, and lettuce being probably the most favored.

Nuttall gives us a pretty picture of the home-building whims of the yellow warbler—a prize for the cabinet truly!

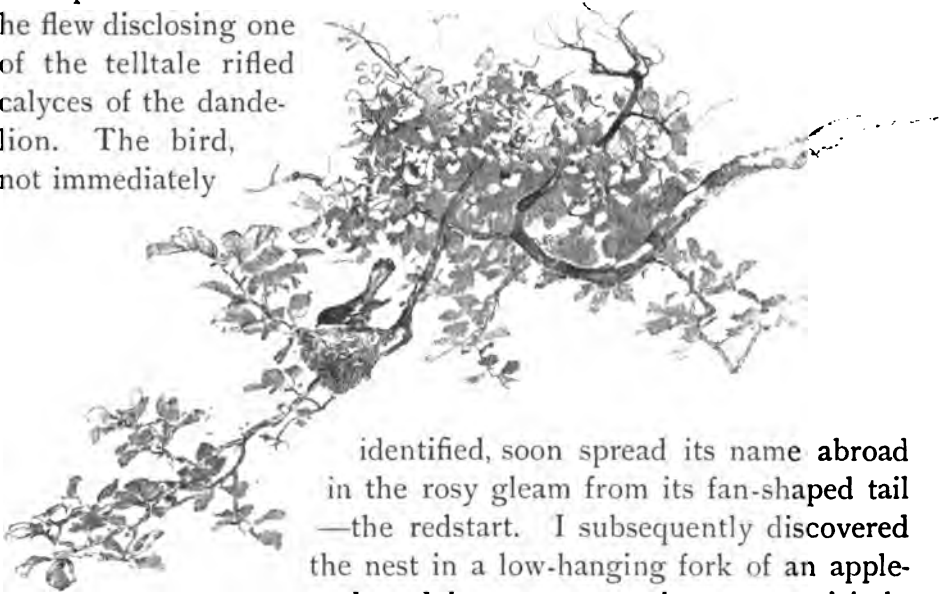
“The nest is extremely neat and durable; the exterior is formed of layers of silk-weed lint, glutinously though slightly attached to the supporting twig, mixed with some slender strips of fine bark and pine leaves, and thickly bedded with the down of

willows, the Nankeen wool of the Virginia cotton-grass (*Eriophorum Virginicum*), the down of fine stalks, the hair of the downy seeds of the button-wood (*Platanus*), or the pappus of compound flowers, and then lined either with fine bent grass (*Agrostis*) or down and horse-hair, and, rarely, with a few accidental feathers," presenting a fanciful bit of bird architecture as well as a keen piece of analysis, in which the erudite botanist is as conspicuous as the ornithologist.

One other "yellow bird," the goldfinch, builds a similarly exquisite home, but reserves its nesting till a much later season than most of our birds, a fact which has caused no little discussion among naturalists; the commonly accepted, though hardly satisfactory, theory having reference to a scarcity of the required seed-food for the young during the vernal months. In a similar vein of reasoning it might be claimed that the nesting was deferred to await the ripening of certain favorite plummy seeds of which the structure is usually composed. One theory is as good as the other, for both are somewhat shattered by numerous instances of nidification as early as the middle of May, in which the nest is of course composed of seasonable downy elements; for the willows and poplars then offer their silken tribute, and the dandelion balls cloud the meadows.

For some years I was puzzled to account for a certain mutilation which I had often observed on the dandelion. As is well known to some of my readers, the dandelion usually blooms three consecutive days, after which the calyx finally closes about the withered flower, and withdraws beneath the leaves. Here it remains for a week or more, its stem gradually lengthening while the seeds are maturing, until, on the fourteenth day from the date of first flowering, the smoky ball expands. For some days prior to this fulfilment the seeds are practically full-feathered, the growing pappus having forced the withered petals from the tip of the calyx. On several occasions I have observed the side of their calyces torn asunder and the interior completely emptied of its contents of a hundred or more winged seeds. I had attributed the theft to some whimsical caterpillar appetite, until one

day I surprised the true burglar in the act. I observed a small black bird rummaging suspiciously in the grass, and suddenly saw him fly to a branch near by with a tiny puff in his bill—a downy tuft on one side and a bundle of seeds on the other—the spot from which he flew disclosing one of the telltale rifled calyces of the dandelion. The bird, not immediately



identified, soon spread its name abroad in the rosy gleam from its fan-shaped tail—the redstart. I subsequently discovered the nest in a low-hanging fork of an apple-tree, and a dainty structure it was, exquisitely adorned with gray moss and skeleton leaves, and in this case showing an unusual preference for dandelion seeds, with which its soft bulk was well felted. Inasmuch as there were thousands of the dandelion balls opening every sunny day this feat of forage was not one of anticipation of a natural harvest; rather a question of economy of labor—a whole dandelion ball at one compact pinch.

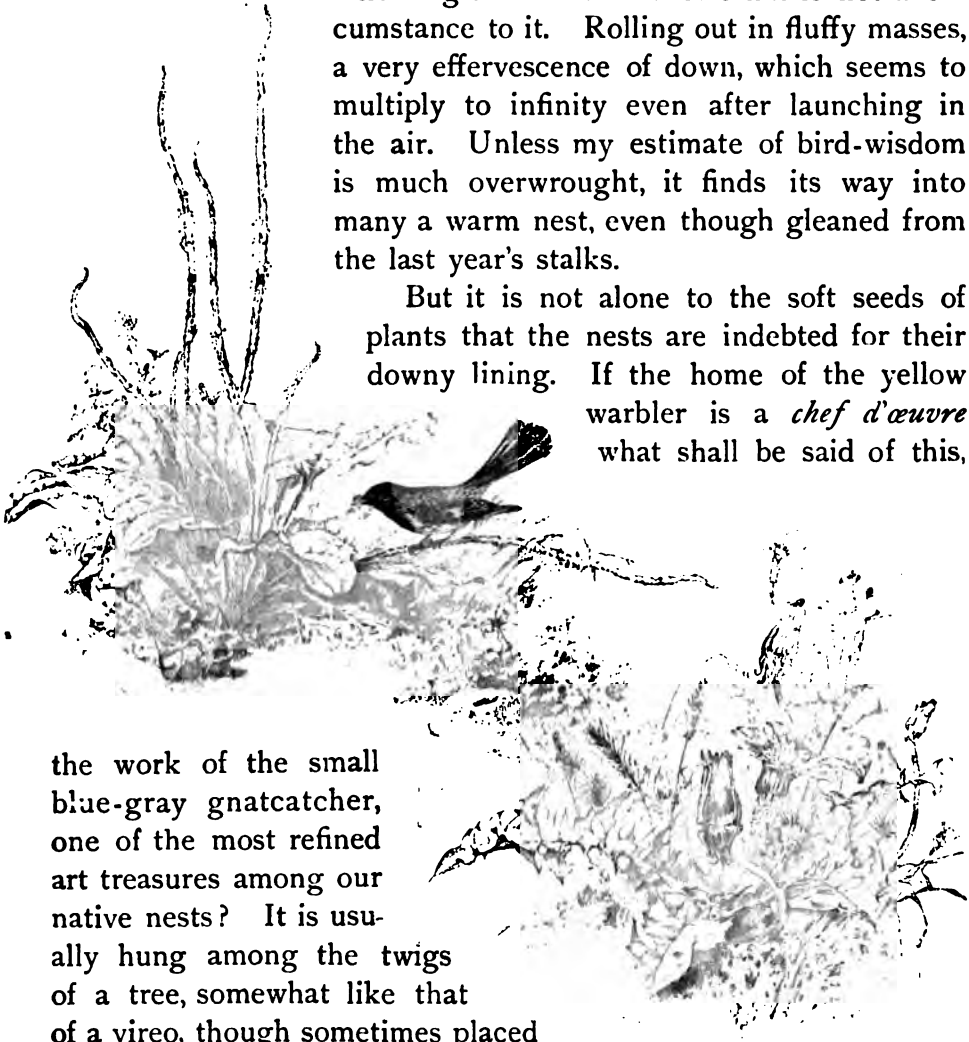
Wilson gives the nest material of the yellow warbler as “silkworm floss and willow cotton,” which present a singular incongruity as to chronology, the willow cotton being a buoyant feature of the May breeze, while the asclepias does not take wing until late August and September, the silky seeds of the previous year being then of course obliterated. Is it possible that the warbler, like the redstart, may anticipate the bursting pod by an occasional burglary, assisted, perhaps, by those hairy caterpillars which so

often lay bare the interior? How else the bird could procure the material is a mystery.

The "cat-tail" offers an inexhaustible store of down to the later nest-builders. Packed with incredible compactness in its cylindrical equilibrium, when once ruptured—the keystone among the feathered seeds once removed, as it were—what a revelation!

The magician's inexhaustible hat is not a circumstance to it. Rolling out in fluffy masses, a very effervescence of down, which seems to multiply to infinity even after launching in the air. Unless my estimate of bird-wisdom is much overwrought, it finds its way into many a warm nest, even though gleaned from the last year's stalks.

But it is not alone to the soft seeds of plants that the nests are indebted for their downy lining. If the home of the yellow warbler is a *chef d'œuvre* what shall be said of this,



the work of the small blue-gray gnatcatcher, one of the most refined art treasures among our native nests? It is usually hung among the twigs of a tree, somewhat like that of a vireo, though sometimes placed on a branch. The body of the nest is closely felted together with

THE DANDELION MYSTERY SOLVED.

the softest materials of the forest, bud scales, dried blossoms, vegetable downs, and the delicate cottony substance which envelops the unfolding fronds of fern, with flexible skeletons of leaves as an external framework. The rim of the nest is generally contracted. But the most marked feature of the structure is its ornamentation; the whole exterior being closely thatched with small, brightly colored, greenish-gray lichen.

The woolly, unrolling fronds of many of our ferns are a familiar feature of the spring woods, and offer at this season, and later, from the mature stems, a tempting crop to a number of our more diminutive birds, including the various warblers, the black and white creeper, and humming-bird, etc.

This exquisitely soft, buff-colored material, for convenience called "fern-cotton," however, is not all from the ferns. A close analysis with the magnifier discloses a diversity of elements. Some of it has been sheared from the mullein. The woolly bloom from young linden leaves and buds of white and red oak have already been identified in the substance, the stems of everlasting have furnished a generous share, and there are doubtless elements from a hundred other sources best known to the birds. Some of it, too, has already served in the winter snuggery of the horse-chestnut bud beneath the varnished scales.

I once observed a tiny bird gleaning among the opening leaves, now webbed and festooned with the liberated soft yellow down, that most beautiful of all the spring's revelations of bursting buds, so aptly figured by Lowell in the provincial tongue of Hosea Biglow:

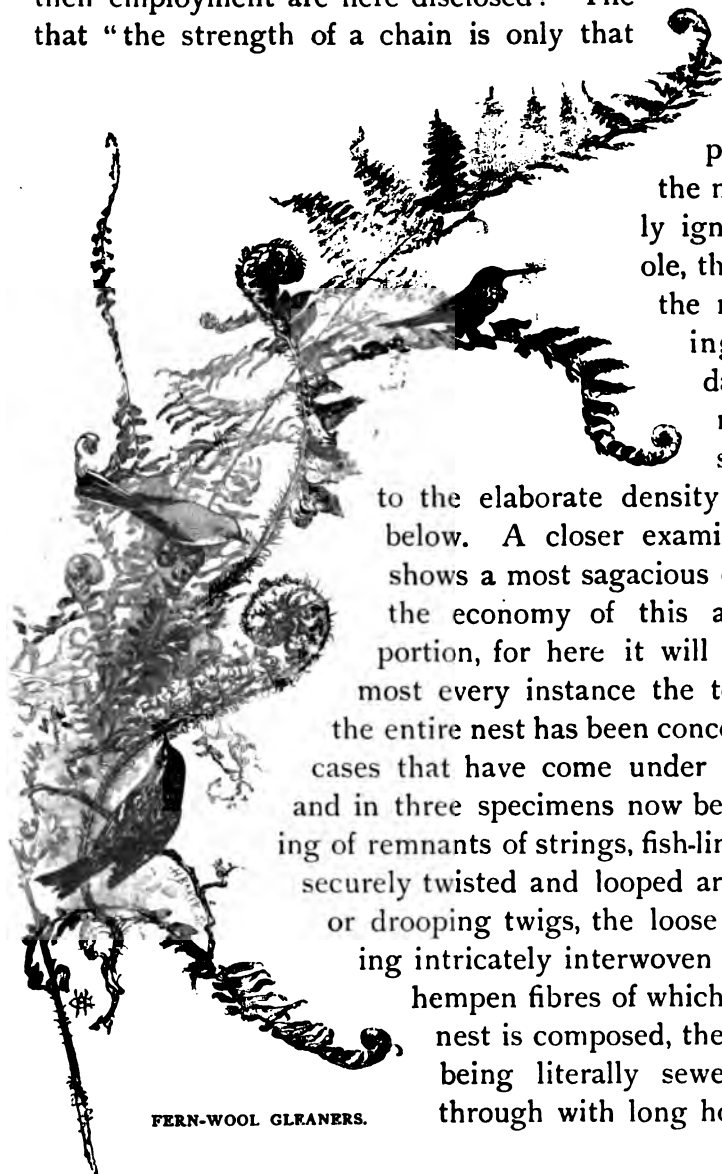
"The gray hoss-chestnut's leetle hands unfold
Softer'n a baby's be at three days old."

How irresistibly does this recall that companion couplet in the "Pastoral line" from the same memorable paragraph, so true to the spirit of the vernal season:

"In ellow shrouds the flashin' hang-bird clings
An' for the summer vy'ge his hammock slings."

For the skilful nests of the vireos have yet their matchless pattern in the work of that prince of weavers, the "hang-bird," or Baltimore oriole, whose swinging, pendulous nest is a masterpiece, not only of textile art, but equally of constructive skill, whether from an engineering or architectural point of view. What sagacious perception of means and intelligent discrimination in their employment are here disclosed! The trite maxim that "the strength of a chain is only that of its weakest link" would seem, on a superficial glance at the nest, to be entirely ignored by the oriole, the attachment of the nest often seeming to exhibit a daring dearth of material and in singular contrast

to the elaborate density of the weaving below. A closer examination, however, shows a most sagacious compensation in the economy of this apparently weak portion, for here it will be found in almost every instance the toughest fibre in the entire nest has been concentrated, in most cases that have come under my observation; and in three specimens now before me, consisting of remnants of strings, fish-line, strips of cloth securely twisted and looped around the forked or drooping twigs, the loose ends below being intricately interwoven among the gray hempen fibres of which the body of the nest is composed, the whole structure being literally sewed through and through with long horse-hairs.



FERN-WOOL GLEANERS.

Remembering Wilson's investigations into the similarly compact nest-fabric of the orchard oriole, from which he disentangled a strand of grass only thirteen inches long, but which in that distance was thirty-four times hooked through and returned in the meshes, the relation of which fact led an old lady acquaintance of his to ask whether "it would not be possible to teach the birds to darn stockings," I was led to test the darning skill of the hang-bird which uses the horse-hair in true regulation style. With much labor I succeeded in following a single hair through fourteen passes from outside to interior in the length of about ten inches, which I was then quite willing to assume as an average as to the total, which would doubtless have reached at least thirty stitches. When this is multiplied by the hundreds of similar sinews with which the body of the nest is compacted some idea may be formed of its strength.

Two types of the nest, both beautiful specimens, are now before me. One, a true example of the "hang-nest," being suspended from the tips of the long, drooping branches of an elm, while the other, more ample, is hung from a horizontal fork of a maple. It is larger at the mouth than the first, but, like it, is suspended from stout strings, twisted round and round the twigs and spanning the fork. For a long period the nature of this peculiar gray hempen fibre which forms the bulk of the oriole's nest was a puzzle. And even now that the tough material has been identified principally as the dried strips of the stalks of common milk-weed, which Nuttall observed the bird to tear from the plants "and hackle into flax," I am not aware that the hint of the oriole, as to its evident utility as a textile for the spinning-wheel or loom, has ever been respected. A strip of this tough dried bark, even when drawn firmly across the finger-nail, separates into the finest of flax, almost reminiscent of the milk-weed seed-floss in its white glossy sheen.

The oriole's nests are not all made in the same mould nor of the same material, but generally reflect the resources of the locality in which they are built. There are numerous instances of anomalous nests, in which the eager quest of the bird has been

artfully humored by the housewife or the ornithological curio hunter, resulting in works of questionable art sophisticated with all manner of contaminations—rags and ribbons, tape and lamp-wick, or perhaps patriotic pendants flying the national colors of red, white, and blue in party-colored zones and strips of gaudy flannel. In contrast to these I cannot but revert with relief to that beautiful fancy which Chadwick has woven into one of these beautiful nests, and in which the intertwined golden and silvery locks of childhood and old age tell a pathetic story.

In one case at least the hint of the oriole would appear to have been appreciated, his nest having first introduced to the public the utility of the black flexible compound which is so common an ingredient towards the centre of our costly “curled-hair” mattresses.

During a recent Southern trip I noted one or two of these pendulous mattresses of the oriole, their black color giving little hint to the observer of the gray Southern moss of which they are really constructed. In the Long Island Historical Rooms there is a specimen of one of these Southern nests, fully eighteen inches long, composed entirely of this glossy black fibre—a veritable piece of hair-cloth to all appearances, no single thread, I believe, showing its familiar gray complexion, the entire material having been presumably abstracted from the drying-poles of the “moss gatherers,” beneath whose arts the Southern moss is converted into “genuine curled hair” by the rotting and subsequent removal of the gray covering, leaving only the black shiny core, which is duly shipped and subsequently sold and “warranted” at fifty cents a pound.

In strong contrast to the foregoing products of warp and woof is the humbler art of the plastic builders—the adobe-dwellers among our birds. Of such are the robin—true child of the sod, with its domicile of mud and coarse grass—and the thrushes generally, the phœbe, pewee, and the swallows. Solid and substantial fair-weather structures, they are yet far inferior in the scale of architectural intelligence; for while in the textile nests even a drenching rain serves but to amalgamate the mass, the

mud-builders are often at the mercy of the storm; a possible fate which is not always anticipated in the selection of a building site. In the case of the swallow beneath the eaves, and the phœbe under the bridge, the home is safe, but the robin occasionally pays a heavy penalty for the daring exposure of its nest, the fair structure of the sunshine literally melting away



in the rain. During the past wet season two such mishaps occurred upon my lawn, the nests having disintegrated and fallen in shapeless masses, scattering the egg contents upon the ground.

Recently I chanced upon another reckless nest, that of the yellow-billed cuckoo, or rain-crow, in the top of an apple-tree—if, indeed, the loose pile of sticks could be dignified by the name of nest at all, being more suggestive of a gridiron, through which the outlines of the head and the long projecting tail of the bird were distinctly perceptible against the sky. As I climbed

the tree the bird flew to the neighboring branches, uttering an occasional hoarse croak in its familiar tone, obedient, as it were, to a periodic pumping stroke of the long tail. I found the nest occupied by a single fledgling, and was moved to congratulate the remnant for having managed to reach his pin-feather days without tumbling out of bed, which I fancied must have been the fate of his presumably former bedfellows, for the edge of the open pile of sticks was lower than the centre whereon he rested.

Examples of this sort of nest-building are happily not common, and in the case of this bird, a near congener to the European cuckoo, though entirely without its parasitic habits, it would seem to have a somewhat parallel sin of shiftlessness. In all the four nests of this bird which I have found, this contributory negligence towards the destruction of its offspring has been manifest. My fancy has sometimes suggested the query whether this may not be an example of the process of evolution from a lower parasitical to a higher state, the dawning intelligence in the art of nest-building.

The turtle-dove is accused of a like carelessness in the construction of its nest. The nighthawk and the whippoorwill, though building no nest at all, are more considerate of their babes, at least assuring them against the fate of the cuckoo's brood by nesting on the ground.

Last summer I was favored with a rare neighbor in the shape of a red-headed woodpecker, not a common visitant in Connecticut, at least in the section familiar to me. Remembering that this was the bird whose flashing plumage and flaming scarlet head kindled the ornithological fervor of Wilson, which led to his subsequent fame, my visitor came doubly recommended. The nest was excavated on the underside of a large branch of an apple-tree near the house; and even though naturally safe from observation, the bird seemed little desirous of concealment, pirouetting about the elm trunk close by the window and speeding like a rocket directly to its nest.

At first thought the peculiar conditions of the woodpecker's

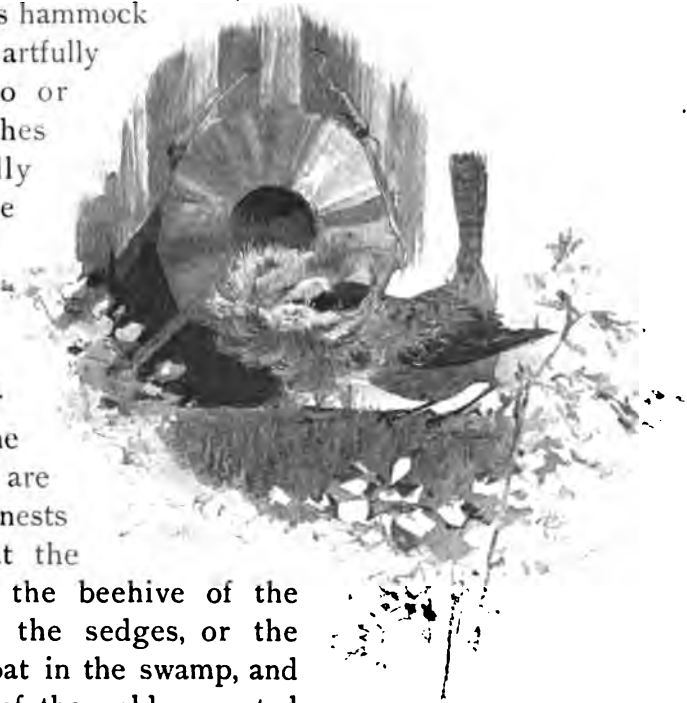
nest would appear to offer advantages of safety above those of other birds, as in truth it does, being at least secure against the hawks and owls and foxes. Yet it is by no means invulnerable. The black snake has a well-known fancy for young woodpeckers, and has often been surprised within the burrow, to the horror of the small boy oologist, perhaps, who is thinking only of the rare white eggs as he feels the depths of the hollow. The birds are also an easy prey to the murderous red squirrel, one of the archenemies of our nesting birds. Last year two of my woodpecker fledglings fell his victims, and only a few weeks since a whole family of flickers, which built in a large neighboring maple, were wellnigh exterminated by the same brigand. Two fully pinioned fledglings were found dead on the ground beneath the hole, each with an ugly gash at the throat, and one of which the squirrel was observed dragging by the head, while endeavoring to ascend the trunk—treating birds like pine-cones—dropping his cone first to enjoy it at his leisure. But one survivor of the brood was seen later, and this doubtless followed the fate of the others. The woodpeckers, in addition to serving their own ends, are also pioneers for a number of smaller fry among the birds, the deserted tunnels being in great demand for apartments, and often a prize won only by supreme strategy or victory among the bluebirds, nuthatches, creepers, wrens, and chickadees, though the last has been known to excavate its own domicile. Indeed, to the wren a hole of any kind possesses great attractions, "it will build in anything that has an accessible cavity, from an old boot to a bomb-shell," says Burroughs. But whether it be a palatial tin box, a post-hole, a tin oil-can, auger-hole, pump-spout, pocket of an old coat, wheel-hub, or tomato-can, the interior is always brought to the same level of luxury in its copious feather-bed.

I remember once, in the days of my early ornithological fervor, discovering a wren's nest in a shallow knot-hole of an old apple-tree. The bird scolded and sputtered at the entrance like a typical setting hen, and even suffered herself to be poked from the hole; and if there be those who think that birds cannot swear,

they should have witnessed the subsequent vocal exercises. The feather-bed disclosed twelve pinkish eggs by actual count, for I remember in humiliation my scandalous pride at having "eleven duplicates for trade."

There are a number of especially well-known favorites among the nests which should be mentioned, either one of which is a sufficient quest for a summer's walk.

There is the grass hammock of the indigo-bird, so artfully swung between two or three upright branches of weed; the skilfully woven basket of the red-wing blackbird in the bog, either meshed within its tussock, twisted into the button-bush, or suspended among the reeds. Then there are the quaint covered nests of the oven-bird at the edge of the brook, the beehive of the marsh-wren among the sedges, or the Maryland yellow-throat in the swamp, and the rare snuggeries of the golden-crested wren and blue, yellow-backed warbler—the former a tiny hermitage, built on the branch of an evergreen, composed of moss and lichen, with only a small hole left for entrance, and the interior lined with down; the latter a dainty den, constructed, according to Samuels, of the "long gray Spanish moss (lichen?) so plentiful in the States of Maine, New Hampshire, and Vermont. The long hairs of the moss are woven and twined together in a large mass, on one side of which is the entrance to the nest—a mere hole in the moss. The lining is nothing but the same material, only of finer



TO FEATHER THE NEST.

quality." I have seen but two specimens of this nest—one composed entirely of the long gray lichen which beards the patriarchal trees of our Northern forests, and the other of a shorter species found on fences and rocks.

The nest of the blue-winged yellow warbler is really worth a search. Few of our ornithologists have found it. According to Wilson, it is usually placed in a bunch or tussock of long grass, and is in the form of an inverted cone or funnel, the bottom thickly bedded with dry beech-leaves, the sides formed of the dry bark of strong weeds, lined with fine dry grass. These materials are not placed in the usual manner, circularly, but shelving downward on all sides from the top, the mouth being wide, the bottom very narrow and filled with leaves.

Nor must I forget to mention that curious and anomalous three, four, and once, I believe, five-storied nest which has occasionally rewarded the search of the persevering oologist—a novel piece of architectural art—a monument, as it were, to the intelligence and indefatigable pluck of the yellow warbler in overtopping the wit of the parasitic cow-bird, each story of the curious domicile being erected over the insinuated portentous egg, and sufficiently separated therefrom to insure against its incubation, when the builder shall at last have exhausted her adversary's resources and nestled in peace on the summit of her lofty pile, an apt if facetious embodiment of "Patience on a monument."

We have already alluded in superlative terms to the nest of the blue-gray gnatcatcher, but even that artistic production must yield to its easy rival and model of the humming-bird, in truth the prize among all our nests. Well does the ruby-throat deserve the medal which he wears upon his breast. From picture or cabinet specimens this beautiful mimetic structure saddled on its branch is familiar to most of my readers, few of whom, I am sure, will ever have disclosed it in its haunts, even though the eye may have rested on it a dozen times. The construction of this nest, barely an inch and a half in diameter, is well described by Wilson: "The outward coat is formed of small pieces of bluish-gray lichen, that vegetates on old trees and fences, thickly glued

on with the saliva of the bird, giving firmness and consistency to the whole as well as keeping out moisture. Within this are thick matted layers of the fine wings of certain flying seeds, closely laid together; and lastly the downy substance from the great mullein and from the stalks of fern lines the whole. The base of the nest is continued around the branch, to which it closely adheres; and when viewed from below appears a mere mossy knot or accidental protuberance."

I have found but two in my lifetime, but am confident that a systematic search among the orchards in the glittering trail of the bird as he leaves the trumpet blossoms would reveal one or two more. For there is a strange inconsistency in the bird, which, in spite of its secretive art work, does not hesitate to reveal it by her telltale actions, hovering about an intruder's head like a sphinx-moth in the twilight, and, far from decoying one's attention away from her treasure, like other birds, deliberately settling herself thereon in preference to alighting elsewhere—a conscious jewel that would seem to know its most appropriate setting.

The United States is favored with but a dozen species of the humming-bird, only one of which is found east of the plains. But what glints and gleams and scintillations and spangles among the flowery tropics! where the hundreds of species of these sun-gems sport among their suggestive legion of companion orchids, each feathery atom with its especial whim of nest, here suspended among slender grasses, there hung upon a tendril or poised upon a leaf, or perhaps glued flat upon its swinging, drooping tip. But there is a choice even among diamonds, and it may be doubted whether even the famed tropics afford a more unique example of artistic refinement than this of our native Western humming-bird, described by Dr. Brewer, a species only recently discovered by Mr. Allen, whose name it bears.

"This nest is of a delicate cup-shape, and is made of the most slender branches of the hypnum mosses, each stem bound to the other and all firmly tied into one compact and perfect whole by interweavings of silky webs of spiders. Within it is finely and

softly lined with silky vegetable down. Even in the drawer of a cabinet, without its living natural framework, it is a perfect little gem in beauty. What, then, must it have been in its original position, with the graceful, waving leaf of the maiden-hair fern for its appropriate and natural setting. It was fastened to the fern not two feet above the ground, and to this frail support it was secured by threads of spider-webs so slender as to be hardly visible."

We know not what other nest-treasures yet await us in the woods. There are many rare finds yet in store for the ornithologist in the long list of bird-species, well known by their skins, and even by their songs, but whose nidification is wrapped in mystery—dozens of the warblers, sparrows, flycatchers, and vireos, and others yet awaiting their true historian.

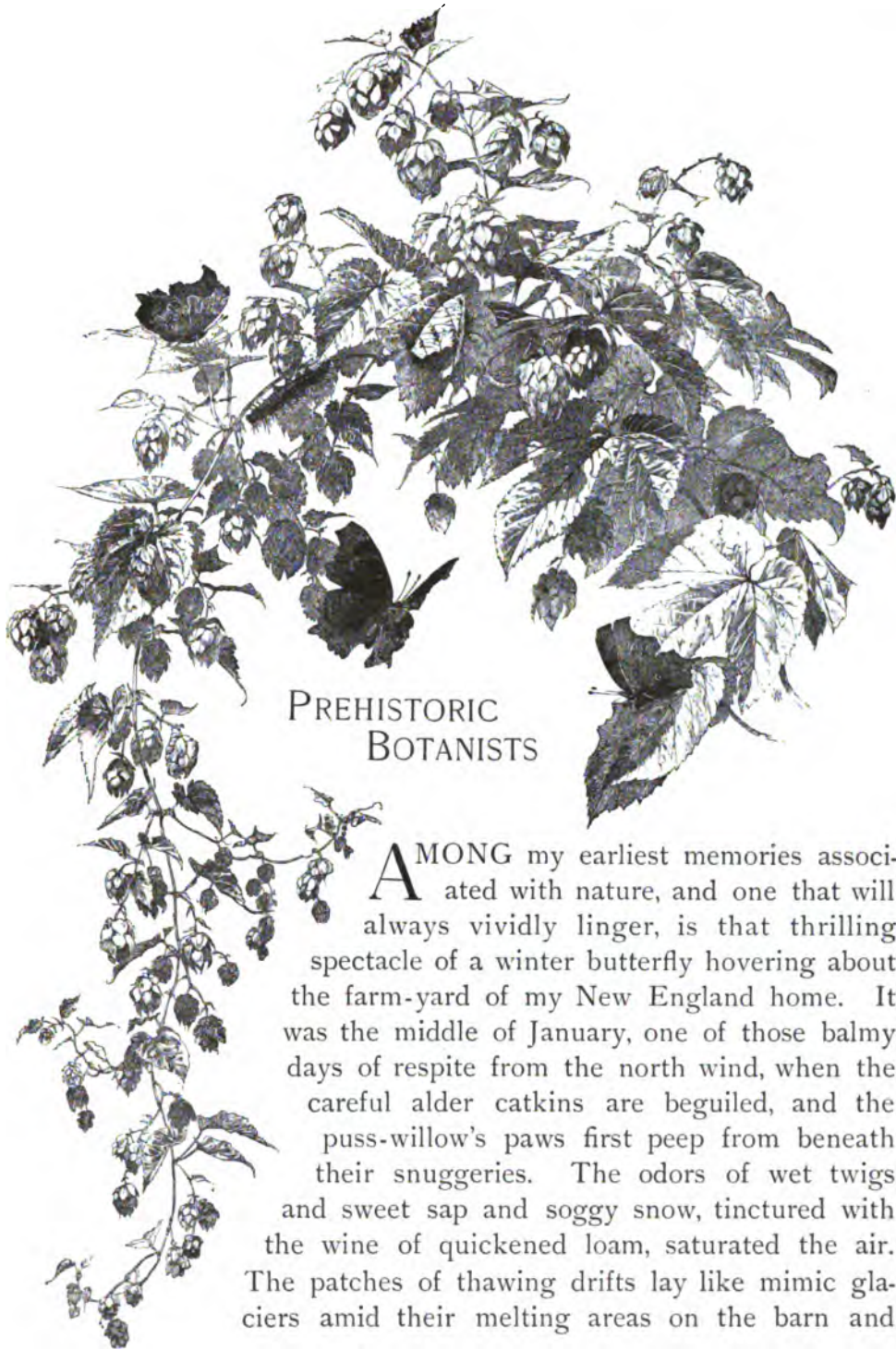




PREHISTORIC BOTANISTS

“Man cannot afford to be a naturalist, to look at Nature directly, but only with the side of his eye. He must look through and beyond her. To look at her is as fatal as to look at the head of Medusa—it turns the man of Science to stone.”

THOREAU.



PREHISTORIC BOTANISTS

AMONG my earliest memories associated with nature, and one that will always vividly linger, is that thrilling spectacle of a winter butterfly hovering about the farm-yard of my New England home. It was the middle of January, one of those balmy days of respite from the north wind, when the careful alder catkins are beguiled, and the puss-willow's paws first peep from beneath their snuggeries. The odors of wet twigs and sweet sap and soggy snow, tintured with the wine of quickened loam, saturated the air. The patches of thawing drifts lay like mimic glaciers amid their melting areas on the barn and

barrack roofs, slowly stealing down the shingle or hovering in impending avalanche at the dripping eaves. High on the ridge-pole of the barn my butterfly first disclosed itself, now fluttering against the sky, now alighting with expanded, gently moving wings, sipping at the steamy edge of the snow, or sailing across its white field. How I sighed to bag the prize! What yearnings and heart-throbs, wondrous stratagems of allurements, and superhuman schemes of capture! what hopes and fears animated my demoralized being as I watched the sportive antics of the sprite, as in turn it circled close to the eaves among the swallow-nests or disappeared behind the peak or gable! What a marvellous account of this strange visitor could I have given had not prosaic fortune at last permitted its identification!

An event like this is a perpetual spring to the spirit. How often through the years have I drunk therefrom and been refreshed! But in my present mood the incident recurs with a new significance. That enrapturing butterfly happily is still free, but a similar one since captured proved to be a species familiar in my cabinet—the *antiopa*, the same that fluttered among the winter mosses of the “Old Manse” of Hawthorne. “Rare butterflies,” he writes, “came before the snow was off, flaunting in the chill breeze and looking forlorn and all astray, in spite of all the magnificence of their dark velvet cloaks with golden borders.” In this “lone butterfly” of the winter sun, as Wilson mistakenly calls it, we have a representative of a small family of beautiful insects for which the cold has no terrors; for it is not true, as the poet of “the butterfly” would have us believe, that

“each gay little rover
Shrinks from the breath of the first autumn day”;

nor, as Shakespeare implied in the lines—

“Men, like butterflies,
Show not their mealy wings but to the summer”;

for though upon the approach of the blighting frosts one by one "the painted meadow tribes" have succumbed and fallen, the *antiopa* has scarcely lost a feather from its wing or a buoyant plume from its sunny spirit.

In the bare woods of November he sails across your path, or challenges your curious zeal as he merges into rock or tree, extinguished amid his own folded wings. Upon the pungent pile of pomace at the cider-mill he suns himself in questionable content as his wings

"Expand and shut in silent ecstasy,"

joined by a bibulous, convivial company, not only painted like himself, but dressed in gayer plumage, though all close akin. The Milbert's butterfly is here, also the Atlanta, the Comma, perhaps the White J, and the Progne—for this is a family party, in the enjoyment of a seemingly common inherited proclivity. Who has not seen that deep orange-red sylph with jagged, spotted wings, like a bright, lingering leaf in an autumn eddy, circling about one's progress through the denuded woods, tempting one's heedless foot in the orchard path, or alighting on the fence, head downward, with alert wings out-spread?

The winnowing process of the cold has left but these few conspicuous remnants, all members of the same interesting group, the Angle-wings, boreal butterflies, the hardy Alpine species of our Lepidoptera, if I may so speak, for these butterflies are Alpine in a larger sense than mere hardihood. While most of our common kinds are peculiar to our continent, these late survivors of the winter, hibernating in crevices and crannies during the coldest periods, and taking the slightest hint of genial moderation to lend their animated being to the dormant landscape, are in truth cosmopolitan types; the Painted Lady (and Comma?) is found in northern Europe; the Atlanta is common in Europe, Africa, and the East Indies; while the *antiopa*, the prominent member of the group, is an almost world-wide denizen—at home in arctic snows, omnipresent from Alaska to Brazil, and from Lapland to northern Africa.

It was doubtless the spell of one of these butterflies that crystallized the arctic simile of Wordsworth:

“I’ve watched you now a full half-hour
Self-poised upon that yellow flower;
And, little butterfly, indeed
I know not if you sleep or feed.
How motionless!—not frozen seas
More motionless”;

and quickened the insight of Joachim Miller:

“Gold-barred butterflies, to and fro
And over the water-side wandered and wove,
As heedless and idle as clouds that rove
And drift by the peaks of perpetual snow”;

for are these Alpine similes not truly prophesied in the nether mirror of these folded wings, with their bordering aiguilles, their verdant zone beneath their peaked borders, their merging veins of mimic glacial streams and isolated patch of silver, like the tiny lingering remnant of an avalanche in a vast field of striate granite? All these wondrous hieroglyphs are here apparent to the inward eye, though only revealed to mine, as I have said, as though in a mirror, from this storied wing of a butterfly, the “Comma,” captured by my own hand on the ice midway in the Mer de Glace of Switzerland. “Every object rightly seen unlocks a new faculty of soul,” says Emerson; and while I would make no claim, even as the humblest interpreter of the infinite design throughout nature—where, as Lubbock believes, from the irresistible force of a long array of facts, “not a hair or line or a spot of color is without a reason, or has not a purpose or a meaning,” every touch of the Infinite Creator the symbol of a thought and purpose—I may at least offer the tribute of a beautiful simile which came, not as a guess at truth, but as a swift revelation from the painted wing which I had seen before a hundred times, a mere gray specimen in my scientific cabinet. Shall

I ever again look upon the folded wings of the Progne or Faunus butterfly without a consciousness that I now see "through and beyond" where before I had only looked upon its scales?

Not the least among the pleasant episodes of a recent European trip was the continual recurrence of this familiar companion, the *antiopa*. In the lanes of Cheshire—though I learn the insect is here a rare visitor—I was fortunate enough to find him; among the dikes of Holland I saw him, and even among the mountain crags of Switzerland, hovering high aloft in buoyant flight above the sea of ice, as though with heart set upon the cloud-veiled pinnacle. How irresistibly, then, do I return to my introductory picture of the snow upon the shingles! What reminiscent innate dreams of eons past were compassed in the flight of that brown sylph above the mimic glacial fields upon the roof!—for the *antiopa* of to-day but links the present with the primeval past. Then, as now, our Angle-wings revelled in the boreal clime, hibernating in rocky fissures, and sipping the sweets from the fringe of blossoms at the skirts of the glacial fields, its present welcome for the cold being but an inheritance from its sturdy ancestry.

It has long been my intention to gather together my observations touching a certain phase of insect life of singular interest, and one not sufficiently dwelt upon, it seems to me, in the literature of natural history. I refer to the strange innate botanical instinct possessed by a large number of insects, notably of the lepidopterous tribe, which, with the exception of the bees, are most intimately associated with the floral kingdom. For the "idle butterfly" of the poet—

"The sportive rover of the meadows,
Kissing all buds that are pretty and sweet,"

the universal type of *dolce far niente*—under the guide of enlightened science now rebukes the heedless estimate of the past, proving its buoyant rounds to have been directed by a divine purpose, concerned in the perpetuation of many of the very

flowers which through the centuries had served the bard merely as a pretty background to its quivering poise. As the lover and companion of flowers, then, the butterfly is thus a botanist *par excellence*, and as an ally of the Infinite, a botanist divine. But it is not with either of these functions, so ably dwelt upon by more learned pens than mine, that I am at present concerned. In another more literal and prosaic, perhaps, but equally marvellous resource—the scientific classification of species—the butterfly has proven a prehistoric antecedent to the fathers of botany, and an oracle not sufficiently regarded in later times.

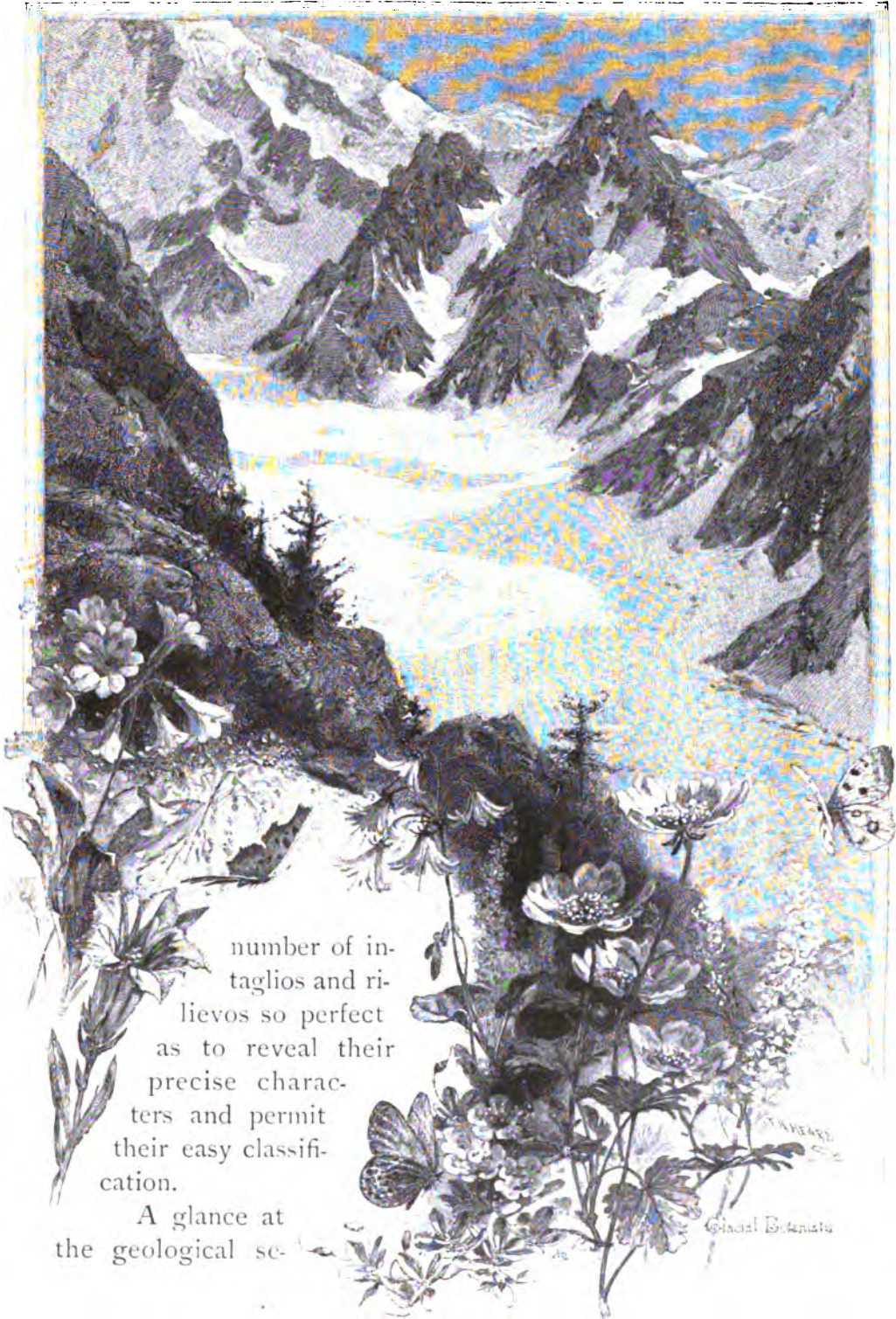
Botanical history is full of learned dissensions among the wise heads upon the botanical affinities of this or that non-committal plant, whether it should be placed here or there among the natural orders. How many a martyr blossom has served but as a shuttlecock in the learned *mêlée*, tossed back and forth for years ere it found its final rest among its congenial kindred, while a mere appeal to the butterfly might long ago have solved the problem and brought immediate peace.

Unimaginable ages before Linnæus, our prehistoric botanist hovered around the blossoming moraines, singling out the affinities of nettle and nettle, saxifrage and saxifrage, and linked them all in its flight. What are my authorities, is it asked? Fancy and inference—inference tested by analogy, analogy reinforced by present facts, and, last, the absolute seal of authority everywhere imprinted in the great book of stone—the witness of the fossil wing and its companion tribes of extinct vegetation.

In the delicate intaglios of the shale and bibliolite, in the bead of amber we may find a full text and epitome:

“I saw a flie within a beade
Of amber cleanly buried;
The urne was little, but the room
More rich than Cleopatra's tombe.”

In the heart of this limpid shrine are entombed thousands of species now extinct, while even the solid rock has divulged a



number of in-
taglios and ri-
lievos so perfect
as to reveal their
precise charac-
ters and permit
their easy classifi-
cation.

A glance at
the geological se-

STANLEY
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Geological Botanists

quence of fossil insects with their companions of vegetation reveals many interesting and cumulative facts. In the Carboniferous period, as pictured in the coal, we find vegetation consisting entirely of ferns, club-mosses, and "horse-tail," in luxuriant growth, as well as the most primitive pines—the lowest in organization among the true flowering plants. The companion insects were of the dragon-fly, locust, and beetle tribes. Inasmuch as these are insects that rarely frequent flowers, we find that the companion plants are all flowerless genera, that require no insect aid for perpetuation, or of trees whose existing counterparts—white pine and spruce, etc.—even to-day ignore the existence of insects, and depend wholly upon the wind in the scattering of their pollen and consequent perpetuation.

The Reptilian age, which followed after the annihilation of all preceding species, we find ushered in by a luxuriant growth of seemingly freshly created types of the previous mentioned tribe of plants, followed in the Triassic, Jurassic, and Cretaceous periods by the successive multiplication of Palms and Cycads—wind fertilized plants again—succeeded at last by a countless host of blossoming trees and flowery fragrant vegetation: oaks and willows, beech, alder, tulip-tree and blossoming herbs and shrubs, accompanied by a myrmidon representation of all the tribes of insects now known. In the light of modern scientific revelation who shall question the analogy or significance of this simultaneous creation, or that the prehistoric bee and butterfly were called into being obedient to the same design which we see them now fulfilling among the fragrant blossoms of our meadows?—for fragrance had not been wasted on the desert air of those earlier mesozoic times.

"Geologists inform us," says Hugh Macmillan, "that all the eras of the earth's history previous to the upper miocene were destitute of perfumes. It is only when we come to the periods immediately antecedent to the human that we meet with an odoriferous flora." An era of gladness in anticipation of the birth of man.

In further reinforcement bearing upon the functions and an

tiquity of my botanists, Macmillan records having seen several butterflies of the beautiful Apollo species at home eight thousand feet above the sea. Another traveller observed a butterfly hovering high above him while on the summit of Mont Blanc. I myself saw several butterflies revelling among Alpine flowers at an elevation of six thousand feet, to say nothing of the occasional individuals which I observed floating far above me about the crags. Willis chronicles the discovery of numerous specimens in glacial ice fourteen thousand feet in altitude. Moreover, on the summit of Flégère, six thousand feet, I found a large moth which had just emerged from its chrysalis, affording conclusive proof that its entire existence in the caterpillar state had been spent in this Alpen clime.

That was rather a hap-hazard poet, therefore, who sang of his delight to breathe the "iced air of the mountain-top"—

"Where the birds dare not build, nor insect's wing
Flit o'er the herbless granite."

Indeed, these Alpen fastnesses have a beautiful sturdy flora and fauna of their own, and are replete with life. The *Rhododendron Nivale* defies the elements upon its storm-beaten stronghold seventeen thousand feet in altitude, two thousand feet higher than the summit of Mont Blanc, and with its scarcely less doughty companion, the "least willow," are among the last plants with woody stems which one will meet in the ascent of the Alpen summits.

In the last named little shrub alone is furnished a fitting indorsement to the claim of antiquity suggested by my title, and a complete refutation also of the common belief concerning the absence of insect life on the loftiest Alpen summits, as this little omnipresent herbaceous willow, barely three inches high, often indeed not more than an inch, still, with its ambitious show of honey-baited blossoms, is absolutely dependent upon insect visits for its perpetuation, the pollen-bearing flowers being on separate plants from those which produce the seed. Müller observed a small

moth acting as sponsor to these hardy blossoms. Need we doubt that the ancestry of these tiny flowers saw the light obedient to the same divine plan disclosed in the blossom of to-day, or that the mission of their companion honey-sippers was ever else than at present?

Is not the same conclusion equally irresistible with regard to the other strange, present functions of the butterfly, which form the subject of this paper and which I now illustrate—a function which has presumably deteriorated rather than otherwise through the ages.

Deep in the damp woods of late summer we shall often find a constant presence flitting above the succulent herbage, alighting now here now there, its bright orange wings flashing in the sunbeams, or gently fanning its own shadow as it rests upon some tempting leaf or sprig. Observe its rounds carefully. Here is a thick undergrowth of spikenard, ferns, bedstraw, colt'sfoot, rue, bidens, ampelopsis, aster, wood-nettle, horse-balm, sunflower, and an attendant host of plants. Our butterfly is now sunning its damask feathers on the topmost leaf of yonder wood-nettle, now creeping around its edge, and revealed only by the translucent shadow responding to the gentle fanning motion of the wings. In another moment we catch the fiery gleam in a sunbeam as the sylph again soars above the herbage to settle among the tall sunny leaves beyond; these also are nettles. Now it floats above our heads and alights upon the pale green plant at our elbow; and what is this? It is a wood-nettle. And thus it flits by the hour, draping the underwood in ethereal festoons from every nettle spray among the copse.

A closer scrutiny of these plants will throw a little light upon this discriminating flight. The leaves are seen to be partially devoured, and an occasional one appears to droop with an unnatural attitude, a position readily explained when we discover the angular pitch caused by the severing of the three prominent veins close to the stem, the edges of the leaf being also drawn together below. Upon plucking one of these leaves, and looking beneath, we discover the curious recluse, at once explaining

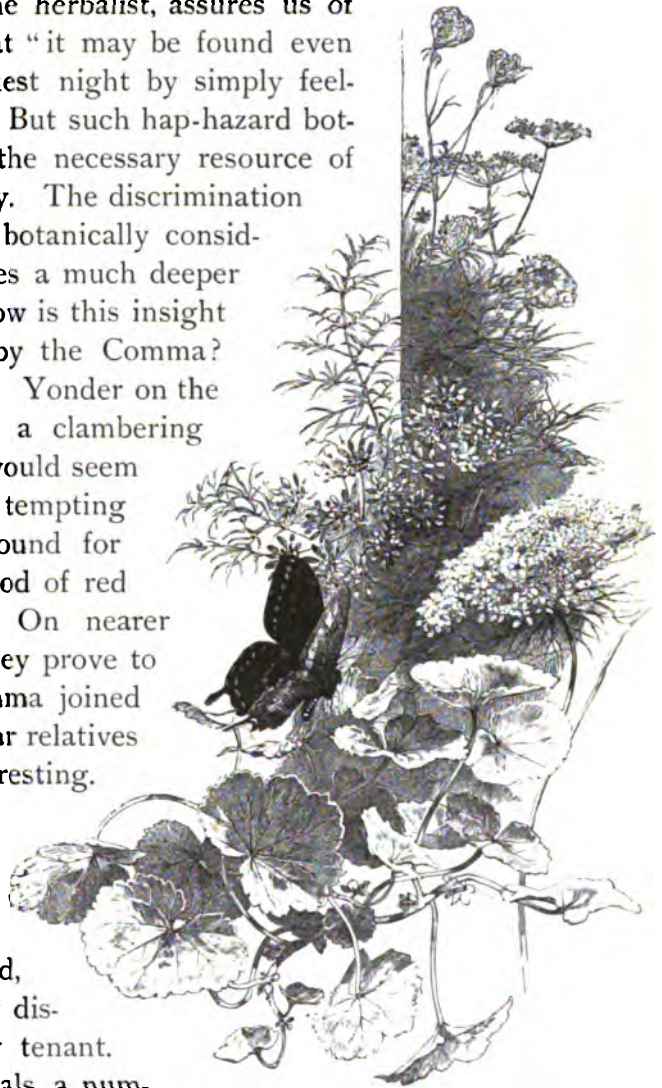
the artful tented leaf and the presence of the butterfly, the gray spotted and spiny caterpillar of the Comma Angle-wing.

To be sure, it may be said that the nettle is not a particularly difficult plant to distinguish. Indeed, old Culpeper, the herbalist, assures us of the fact that "it may be found even in the darkest night by simply feeling for it." But such hap-hazard botany is not the necessary resource of our butterfly. The discrimination of a nettle, botanically considered, requires a much deeper insight. How is this insight possessed by the Comma?

Let us see. Yonder on the stone wall a clambering hop-vine would seem to afford a tempting sporting-ground for a small brood of red butterflies. On nearer approach they prove to be the Comma joined by a few near relatives equally interesting.

Here and there our careful search discloses a tented leaf precisely similar to those already described, while beneath we may discover the same spiny tenant.

Continual search reveals a number of similar spiny caterpillars, though variously variegated, and perhaps a gilded chrysalis or two among the stems and crevices



between the stones. Suppose we now transfer them all, perhaps a hundred or more specimens, to our box, and await the transformation from those pendent nymphs which soon will begem the interior. After the lapse of a fortnight, upon opening the lid the former sleepy hollow seems to have blossomed with painted wings. Here shall we find our Comma by the dozens, and very likely, too, counterparts of all the bright tribe which fluttered above the vine upon the wall—Semicolon and White J. A bright orange butterfly is now seen sunning itself upon the young elm-tree near by. We capture the insect with our net, and find it identical with the Semicolon in our box, while examination of the elm leaves reveals not only the suggestive empty chrysalis shell, but several thorny caterpillars beneath those well-known tented leaves.

If we care to continue our investigation among the herbage we may discover these same caterpillars upon the little clear-weed in the dank shade of the orchard, a succulent plant hardly a foot high, the very opposite to a nettle in its glossy smoothness; and also on the pellitory, a companion weed. Upon all of these plants, in addition to the various nettles, I have found the insects, and once on the hemp. I have also seen their deserted tents on the paper-mulberry, an exotic tree, only sparingly cultivated, but a careful search has failed to disclose the caterpillar on any other plants. Entomologists say that they are also frequently found on the *Celtis*, or sugar-berry tree. Here, then, we have the following summary and completed list of plants upon which the eggs of the butterfly have been laid: wood-nettle, great stinging nettle, and all other nettles; false nettle, all the elms, clear-weed, pellitory, hemp, paper-mulberry, and sugar-berry tree. What light does our botany throw upon this list? Turning to "wood-nettle" we are referred to *Urticaceæ*, or the "nettle family," wherein are disclosed all of the above species of plants, which actually complete the list of genera and nearly all the native species of the order.

I am not informed whether this list is extended with the additional species to be found in the remoter parts of our country, but in the West and South I should confidently look for the caterpillar on the Osage orange, Planer-tree, and the fig, as it must

most certainly also inhabit the mulberry. Have we not here a prehistoric prophecy fulfilled in an immemorial, emphatic indorsement of the recent classification of a difficult group of plants, concerning which the botanical fathers were long at differences?

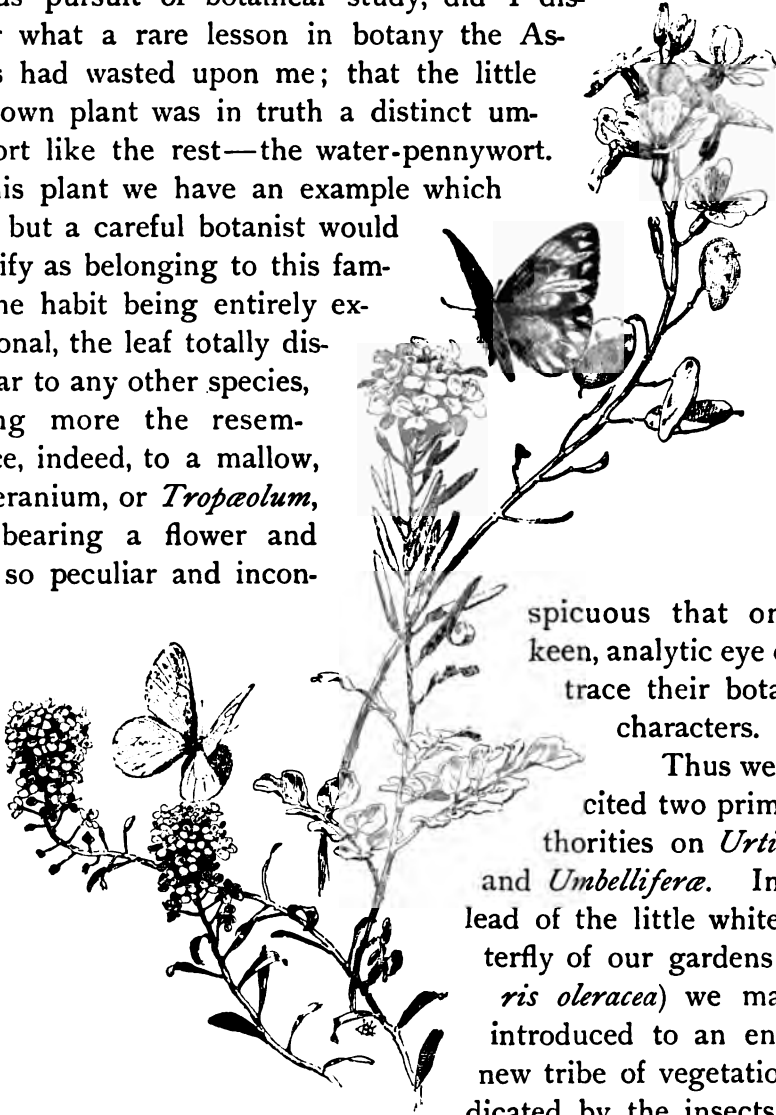
There would indeed appear to be little in common between the nettle and the elm-tree, or sugar-berry tree with its sweet edible drupes, but the modern scientific analyst readily discovers their close affinity, though for years, under sanction of learned authorities, the elm and *Celtis* and others of the group were classed among totally distinct orders of plants.

An equally remarkable fidelity to a single group of vegetation is seen in the example of our beautiful black Swallow-tail butterfly—the papilio of the umbelworts or Parsley family.

In the early summer we may find upon the garden fennel or parsley the beautifully marked caterpillar of this species—bright apple green, with circling bands of sable velvet studded with golden yellow buttons. They are conspicuous to the eye in their beauty, and when disturbed, conspicuous in a less gratifying sense to the nostril, giving forth an obnoxious odor from an extensible double glandular horn, usually concealed within the front segment of the body. The caterpillar is easily recognized anywhere, and its habitat is wide. Let us examine its bill of fare. The plants commonly attributed to this species are parsley, fennel, carrot, and celery. Harris found them also on poison-hemlock, *cicuta*, dill, caraway, and anise, to which list I can append the further additions from observation: wild carrot, sanicle, with its tenacious burs (in the woods), angelica, archangelica, cowparsnip, and lovage. All of these will be found to follow in their natural sequence, in the classification of our botanies, under the order *Umbellifera*.

This strange fidelity of the Asterias to a single order of plants I had noted even in boyhood, and had welcomed my butterfly as an infallible aid in my botanical study. But one day my confidence was shattered by the discovery of a number of caterpillars feeding upon a creeping, round-leaved plant growing by the edge of the brook—a prostrate succulent herb, seemingly devoid

of flowers, quite distinct from all the other food plants, and new to me. I simply noted it as an exception, and lowered my butterfly a peg in my esteem. Not until years later, in the more serious pursuit of botanical study, did I discover what a rare lesson in botany the Asterias had wasted upon me; that the little unknown plant was in truth a distinct umbelwort like the rest—the water-pennywort. In this plant we have an example which none but a careful botanist would identify as belonging to this family, the habit being entirely exceptional, the leaf totally dissimilar to any other species, having more the resemblance, indeed, to a mallow, or geranium, or *Tropæolum*, and bearing a flower and seed so peculiar and incon-



spicuous that only a keen, analytic eye could trace their botanical characters.

Thus we have cited two prime authorities on *Urticaceæ* and *Umbelliferaæ*. In the lead of the little white butterfly of our gardens (*Pieris oleracea*) we may be introduced to an entirely new tribe of vegetation, indicated by the insects' spe-

cific name—the cabbage or potherb butterfly—a member of a small tribe of unimpeachable experts on the Mustard family. For it matters not whether in the form of candy-tuft or sweet-alyssum,

cabbage, horseradish, kohlrabi, broccoli, cauliflower, kale, turnip, or radish, the "fragrant wallflower gay," or

"lady's-smock, all silver white,"

it is all one to them. Among all the members of this mustard-loving tribe, whether American or exotic, whether among the yellow mustard-fields of Holland or the peppergrass of the New England road-side, the *Cruciferous* plants are to them the cream and spice of all creation.

The botanical characters of this order are quite distinct, it is true. It is not difficult to trace a plant to this tribe by the quaternate petals and construction of its fruit, those important requisites for the human botanist, but the insight of our white butterfly is not so superficial. There are neither flowers nor fruit on many of the plants at the time they are selected by the insect; and furthermore, in anticipation of the possible suggestion that this selection may be the result of reminiscent associations from a previous caterpillar state, I may mention the interesting fact that I have seen this same white butterfly singling out with marked partiality all the turnip roots and radishes from among the baskets of a grocery shop in the city streets. These roots, of course, the insect could never have tasted nor seen, even though the previous caterpillar had possessed the power of vision, which is denied by entomologists.

What lover of the country will not own his tribute to the omnipresent little yellow butterfly, companion of our September fields, its folded wings, like a tiny rudder of gold, taking the helm of all the wind-blown golden-rods of the road-sides, whose bright beves circle the borders of every mud-puddle, rising from their obscurity to swarm in mazy tangle about our carriage as we pass? Honey sippers and tipplers, they now would seem to fulfil the impeachment of the "idle revellers" of the poet; but such inference is unjust, for though now content in the sweets of aster, solidago, and other autumn blossoms, these are but their recess flowers. Their previous and most busy attention has

already been bestowed upon another widely different class of plants. This *Philodice* butterfly is one of our most accomplished botanical authorities—a botanist who knows beans, in very truth; for where is the genus of the bean tribe of vegetation that it has skipped in the choice of foster-plants for that future offspring? Lima beans, scarlet-runners, peas, sweet-peas, wild-bean, indigo, red clover, hop clover, white clover, puss clover, medic, medicago, lucern, melilot, rattlebox, vetch, and many more—all of the leguminous or bean tribe.



Here is a near European relative of this same butterfly which feeds upon "Coronilla and broom and other diadelphous plants," and another allied species that feeds upon *Cytisus*, all of which our botany of course includes under *Leguminosæ*. It is interesting to note further that certain other individuals in this same butterfly tribe, *Colias* (exotic species in the heart of Brazil), continue the list among the tropical *Leguminosæ*; all of which proves the close affinity between the animated winged genus, *Colias*, and the "winged" corollas of the pea-blossomed flowers.

In the agile white-banded "skipper" (*Tityrus*) we have another remarkable illustration of discrimination among the same order of plants, for this butterfly, like most of its tribe, is partial to "a mess of beans," and are indeed discriminating "skippers" of all but "pulse and pease." The curious, big-headed caterpillar may be disclosed in its cocoon-like nest of leaves among the

foliage of the common locust and viscid locust and thorny acacia and wistaria, these being the food plants commonly given by the authorities; but the descendant of this intellectual larva also includes the delicate wild pea-nut vine, and ground-nut vine, and bush clover, *Hedysarum*, garden bean, and all the *Desmodiums* in its order of the *Legumes* for its bill of fare, for I have discovered the species on all these plants.

There are many other insects for which the Pea family possesses special attraction. There is the tiny pea-weevil, a representative of a tribe of beetles whose early existence is spent within the ripening seeds—doubtless a common ingredient in our appetizing dish of green peas. I remember once reading of a Baltimore oriole having been shot for “eating peas,” the contents of the craw afterwards disclosing only such peas as were infested with the weevil. This diminutive insect, indicated in our “random posy,” probes the pod shortly after the withering of the blossom, and lays its eggs therein. The young immediately penetrate the peas, and there fulfil their existence, emerging in the following spring as perfect beetles. Our little “wild” rattle-box has a similar tenant, which upon its escape leaves a clean, round hole in the black pods of autumn, these tenanted pods, by some strange consciousness, generally remaining intact, while the perfect specimens have burst and scattered their seed.

In the same illustration may be seen a singular rolled leaf upon a hazel branch, and concerning which I will quote a page from my notes of years ago: “Those small rolled brown packets upon the hazels again! Shall I ever solve them—precious goods done up in small parcels, but by what insect, and how? This mysterious bundle committed to the hazel has been a poser to me all my life, I never yet having been able to discover the artist at its work—for artist it is indeed. I found to-day a number of the prize packages freshly done up, the folded leaf yet green though half severed by the teeth of the insect, and hanging pendent to the stem. A tiny yellow egg had been deposited at the tip of the leaf—as shown by analysis of unrolling—and the leaf then folded in half at mid-vein, then rolled from tip upward to stem,

and retained in its compact coil by some touch of jugglery which I have not been able to divine, as no gluten nor web of silk can be found. Just try and roll up one of these packages yourself, and without recourse to your accustomed string, leave it thus closely and firmly intact! No web, no gum, no stitch, but much of the know how. Whoever



"SKIPPERS."

the clerk who does up these packages, he has a long head and has kept his secret from me very securely."

Since the writing of the above, though not yet any more enlightened as to the author of this hocus-pocus bundle, I have several times observed a suspicious-looking brown beetle nosing among its folds, and in his strange make-up freely realizing the unconscious prophecy of the "long-head," for the

insect is one of the weevils, which are noted for their extensive frontal development.

I have also observed numbers of similar packets on alders, in some instances every leaf upon a given branch serving as a wrapper or showing its bare stub, the ground beneath being strewn with the tiny bundles. Neither do I know the author of these packets, but would venture the assertion that this is an expert on the alders as the other is on hazels.

Touching beetles, there is that living gem faithful to the dog-bane. What a pleasant surprise it was to discover this same bright beetle on a mountain plant of Switzerland in my descent from Righi Culm! But no, on close examination it proved to be a slightly distinct species, and, singularly enough, the food plant so closely similar to the dog-bane in appearance as to leave no doubt of its botanical alliance.

There are a few small moths whose lives are interesting. Has the reader ever paused in his country walks to examine the evening primrose plant by day? If not, it will well repay a careful search among these faded cups of last night's whorl of blossoms. They are still haunted by a constant friend of their gayer hours, a small moth which hides within the wilted blossom, only the nether tip of its wings appearing at the rim of the withering corolla, now tinged with pink.

It is the little noctuid of the evening primrose, the moth, earliest among its twilight sippers, while it nestles compassionately by day within the shattered cup, lending its mimetic yellow wings, like added petals, to the drooping flower, sympathetic even to their pale pink mottlings, the identical flush which often mantles the fading petals among which they merge.

The tiny caterpillar of this beautiful insect even now eludes you among the leaves and green seed-pods of the plant, and you may find it also on the crimson fire-weed and various other plants of second choice—all, however, in the same brotherhood of *Cenothera*, the Primrose family.

From Maine to Mexico another small noctuid, known as the Cotton-moth, is found, its chosen haunt being indicated by its

name. "Its food plant in the North has not yet been discovered," says a prominent entomologist. Look to your hollyhocks, altheas, and mallows, my scientific friend, for here you will certainly find the recluse in congenial company. Here is the little "gourd" expert, a tiny moth that shows no evidence of inherited dyspepsia, though its broods devour indiscriminately the leaves and green fruit of cucumber, watermelon, gourd, muskmelon, pumpkin, squash, and wild star-cucumbers, all of the Melon family. The imported silk-worm, it is said, will starve on most substitutes offered in place of its native food, the mulberry, but is found to thrive on the Osage orange—why? For the same intuitive reason that many species of butterflies which feed exclusively on grasses recognize a grass in the sugar-cane and Indian-corn.

We have noted various specialists in quite a list of botanical orders. This buzzing humming-bird-like moth which now whirls about our evening lamps is a reminder of another instructive instance of botanical skill. It is a Hawk-moth, or Sphinx, a name applied by Linnæus to a class of moths noted for the strange arch attitude of their caterpillars; but the name is further borne out in their attributes of wisdom. Of these, one group has been named by Harris, *Philampelus*—"I love the vine." "I love the *Vitis*," or its classic equivalent, would have been nearer the mark, for all this tribe of sphinxes, of which I recall five familiar examples, are equally fond of the grape and the Virginia-creeper, or "five-leaved ivy," as it is sometimes called. On these two plants only are the insects found. What shall we infer from this circumstance? That these plants are the only two native genera in the order *Vitaceæ*—an inference which we find is sustained in our botany.

Not many years since, however, a prominent florist imported a new and beautiful exotic vine—a native of Japan, a luxuriant, close-clinging, rapid climber—which met with great popular favor, and which now completely embowers many of our metropolitan churches, and even private dwellings, clambering from basement to cornice during a period of three or four years. In appearance it is as much like an ivy as anything else—indeed, quite ivy-like

in its habit of growth; but the eye of the Sphinx knew better, and has begun to adopt the plant in its limited diet, for is it not the *Ampelopsis tricuspidata*, a grape-bearing vine close akin to our Virginia-creeper? I have found the caterpillars feeding upon it.

A smaller Sphinx, with thorn upon its tail, known as the "Hog Caterpillar," is perhaps the most common species found upon the *Vitis*. But, says my incredulous observer, "Here is the identical caterpillar which I have found upon a sprig of wild azalea, and have often seen upon the *Andromeda* and *Clethra* and other plants of the Heath family." And the impeachment would certainly seem complete. If we keep the insect until the following spring, however, the moth which emerges from the chrysalis will dispel all doubt. It is found to be a distinct species—the *Versicolor*, which is as partial to the Heath family as its double was to the *Vitis*.

Then there is that great green Sphinx caterpillar, which is the pest of the tobacco-grower, and the thrilling prize of the small boy entomologist, and whose loud-humming, long-tongued moth hovers about our twilight honeysuckles—one of the largest of its kind. It is hardly necessary to mention that this is the same voracious feeder which we find upon tomato and potato plants, as well as occasionally upon the red-berried nightshade, ground-cherry, and apple of Peru. I have never happened to find it on henbane or stramonium; but who shall dispute that the botanical skill which should include the former list might not also extend to all the rest of the *Solanum* tribe?

Once, when a boy, I found a voracious Sphinx upon "pusley," the "mean" weed of the garden, and reared it to the moth—the white-lined Sphinx. The following year I found the same caterpillar on the flowering portulaca, and I have no doubt he is as fond of the "spring beauty" as are the poets, if we could only chance to observe it, for the Purslane family embraces all these plants.

The botanical acumen of the Sphinx extends to various other plant tribes. The sphinx *Kalmia* knows not only the mountain-laurel, but many other heathworts, notably whortleberry, azalea, and cranberry. The Oleander sphinx finds the oleander flavor in

the creeping blue-flowered periwinkle or "myrtle" of our gardens. Another black and yellow individual, whose name I do not know, is true to the Madder family. Another takes the pine, spruce, and hemlock in its exclusively *conifer* diet. The Sphinx *Cinerea* has disclosed itself to me on ash, lilac, the cultivated fringe-tree, and privet—a consecutive lesson in botany which was committed to memory, and verified by my manual in the Olive family.

There is a beautiful moth known as the rosy *Dryocampa*. I have found its black-horned caterpillars on sugar-maples, silver and red maples, and one day discovered it also on the box-elder. How did this little moth know that this ash-leaved bough of spring was only a maple in masquerade? Who but a skilled botanist could ever have identified it? What the *Dryocampa* does for the maples the *Thisbe* butterfly does for the "arrow-woods," and the *Phaeton* and *Lavinia* butterflies for the figworts. The white snowball of our shrubberies is a favorite haunt of the former insect, but it finds the nannyberry-bush an equally attractive *Viburnum*, while the painted-cup, snake-head, and toad-flax form the principal choice of the last two insects, which preside over the family *Schrophulariaceæ*. Among the more modest wild flowers we find the same revelation. The violets have a whole brood of faithful dependants. The handsome silver-spotted Aphrodite butterfly knows that the tall yellow violet of the woods is only a less conspicuous cousin to the blue "bird-foot" species, and that the pansy is only a vain descendant of the wild "Johnny jumper" of past ages, which the progenitor of all the aphrodites sought for the care of its offspring.

I remember once, when a lad, observing a very strange slug caterpillar upon a skunk-cabbage leaf, and subsequently discovered it again on the sweet-flag, or calamus, little dreaming the botanical significance of the event, for both of these herbs are in the *Arum* family—a striking instance of the wide, outward dissimilarity which often exists between allied species. We have already noted, for instance, the affinity between the elm and the nettle, the puss clover and the locust-tree. In further illustration, there would seem to be no greater gap possible in the vegetable

kingdom than that between the pineapple and the Southern moss which drapes our subtropical trees. And yet the discriminating eye of the botanical analyst readily detects their close kinship, and places them side by side. My knowledge of the Southern flora and fauna is limited. I do not happen to know of any insect that inhabits the swinging fringe of the bayou, but if any there be I should confidently expect its discovery also

upon the leaves of the pineapple. There is, indeed, scarcely a single family of plants without its responsible specialist among the insect tribes. We have already noted a number of such, and the list of ready authorities is doubtless as complete throughout this primal supreme botany as in the modern human infringement. Among these orders not already mentioned is the Willow family—the poplars and willows being interchangeable as the choice of many insects.

The great *Compositæ* have many experts, likewise the oak pink, *polygonum*, mint, and *ranunculus*. There are many disciples of the Rose—keen senses that discover it in the apple, cherry, plum, hawthorn bramble, cinquefoil, spirea, and strawberry. The Apple-tree moth



A RANDOM POSY.

is an example, never intrusting that waterproof circlet of eggs (shown in my "random posy") to any tree outside of this family, most commonly contenting herself with the apple and wild-cherry.

I might indefinitely prolong the list of testimonials to this divine plan of association between the insect and the plant; and while it is not a necessary assumption, inasmuch as "we have no experience in the creation of worlds," it would seem a perfectly justifiable inference that all species of butterflies and moths were created with a special affinity to some congenial order of plants. It would then appear that this power of nice distinction has deteriorated in many insects, either through the degraded instinct of the parent or less fastidious appetite in the caterpillar offspring, and inasmuch as the "exception" has come to be considered as an important attribute in proving the rule, I will append a few such instances, some of which, indeed, are quite as interesting and instructive as the "infallibles."

In the examples of the large *Cecropia*, *Polyphemus*, *Prometheus*, and *Luna* moths, as well as in a number of butterflies, it is true the power of discernment seems to have been lost, the selection of food plants extending into various families, though even here, it must be remembered, we are taking a thousand insects as a unit, there being a strong probability that any one individual parent and its offspring may yet be found true to a particular botanical affinity to which its brood is intrusted, the various peculiarities being, as it were, the hereditary result of some confusion of Babel in the remote past. The *Saturnia Io* belies the great show of "bull's-eyes" upon its wings, being blindly indiscriminate. But what do we find in the instance of the Monarch or *Archippus* butterfly, the protégé of the milk-weeds? You will find its black-and-yellow banded caterpillar on all the six species of New England *Asclepias* if you look with sufficient patience, though chiefly upon the common silk-weed. It is a faithful nursling of this lactescent tribe. On one occasion, however, I have found it thriving on the dog-bane, a similarly milky-juiced plant. But what is the fiat of the human botanical judges? The dog-bane is ordered out of the milk-weeds, though it immediately precedes them in the

botanical sequence, and certain affinities are readily traceable between the two orders, both plants having milky sap, opposite, entire leaves, long pods, silky seeds, and other more intricate resemblances. Looking a little further into the subject, we find, moreover, that while now separated in classification, the earlier botanists had included the plant with the milk-weeds, from which it was withdrawn only after much scholarly discussion. Clearly, the antecedent classification of the butterfly should have been respected at the hands of the learned disputants. The dog-bane was linked with the milk-weed eons before the world knew a human botanist. When the writer's botany appears, this priority of *Danais Archippus*, Ph.D., D.D., F.D.S., will be duly recognized.

I have never seen this caterpillar on the closely allied periwinkle, but would almost expect to find it there even as I once observed the butterfly suggestively hovering about a vine of *Hoya* or wax-plant, a cultivated exotic trained about a porch, but which is a true relative of the milk-weed.

A somewhat parallel instance of botanical priority is to be seen in the *Parnassus Apollo* butterfly, the beautiful sylph of the Swiss Alps, member of a boreal tribe, rarely found below an elevation of 1500 feet—lovers of the mountains, as their name implies, and one of which, pictured at the right of my *Alpen* design, I observed among the Alpine cowslips on the summit of *Righi Culm*. The food plant of this insect, according to the authorities, is confined to the saxifrages, a tribe of plants comprising a large number of Alpine species. I learn, also, that the caterpillars are sometimes found on a species of *sedum*—a stone-crop—two families distinctly separated in the botanies, though following each other in *Gray's* sequence; and research further shows that *De Candolle* originally traced the closest affinity between these two orders. It is not on record whether *Apollo* gave him the hint. This airy butterfly is common alike in the flowery vales and snowy heights of Switzerland, doubtless finding abundant congenial companions among this genus of Alpine plants (*Saxifrages*), which have accompanied the surface drifts and hugged the skirts of the glacier through the ages, many of which,

haunting the crevices of the steep aiguilles, have served as modest factors in that process of disintegration which has hurled this vast burden of moraine upon the sea of ice—"Saxa-fragga, I break a stone," says the etymologist.

Some authorities affirm that the "semicolon," which is so wonderfully discriminating in the Nettle family, as already shown, is occasionally found on the Linden. I have never happened to verify this statement. It is certainly not a common choice of the insect in the localities which I have frequented, and I half suspect that the placing of that "Linden" egg was a case of careless mispunctuation on the part of the "semicolon" (if not of the author), or may be referred to some lapsing ancestor which has bequeathed his degeneracy to a single small line of descendants.

In a former work I have alluded to those pretty petal bowers upon the everlasting in which the spiny, white-spotted caterpillar of the hunter's butterfly lies concealed by day, or hangs its jewelled chrysalis—of all its tribe the true model of the poet:

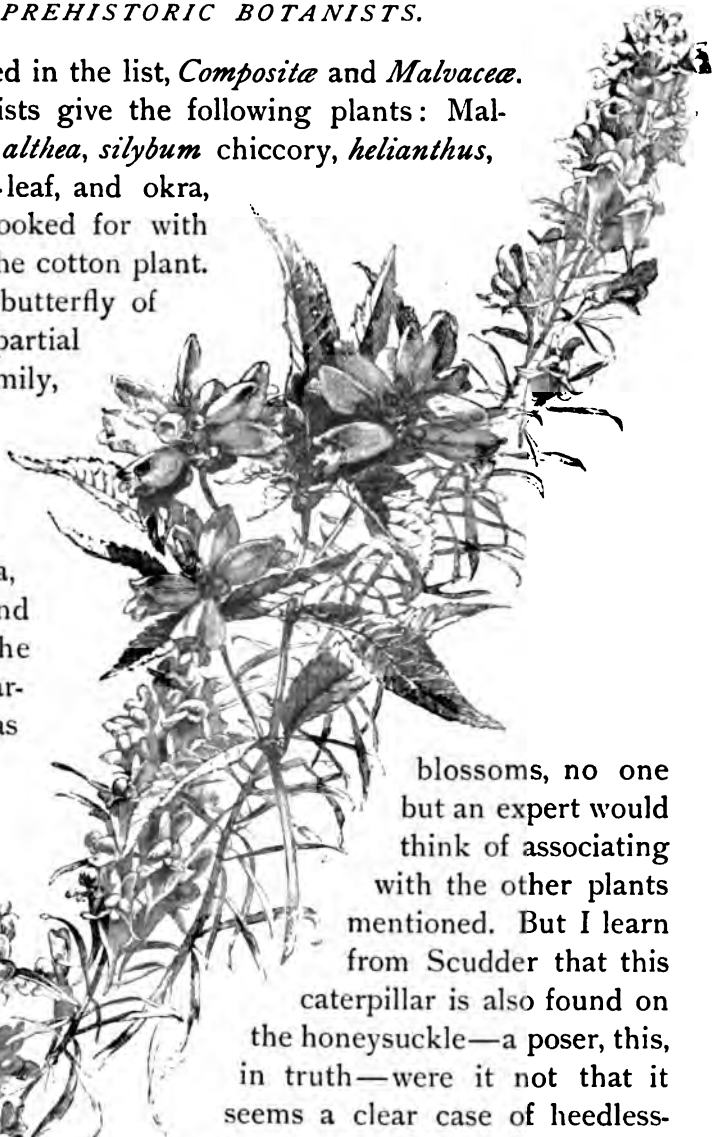
"I'd be a butterfly born in a bower."

Other observers have found the larvæ on many plants of the same genus only, and in the one next allied, *Antennaria*. But Scudder says the "forget-me-not," an unassociated plant, is also included among its diet. There is some mistake here. Let us hope that the fickle deserter may yet listen to the message of the *Flora Symbolica*, and return to its deserted immortelles.

Our Painted Lady butterfly is another interesting exception, as showing a *dual* botanical mission in selecting the plants of two natural orders, and never going outside of them, representing, doubtless, an hereditary choice in each given brood, rather than mixed impartially in one. The caterpillar is quite commonly found upon thistles of all kinds, constructing a web-tent hung from the spiny points of the leaves, whence it emerges at night to feed. "It is found, also," says an authority, "on sunflower, hollyhock, burdock, and other rough-leaved plants," but these other "rough-leaved plants" could most certainly be traced to one of the two

families represented in the list, *Compositæ* and *Malvaceæ*. Other entomologists give the following plants: Mal- lows of all kinds, *althea*, *silybum* chiccory, *helianthus*, *marianum*, velvet-leaf, and okra, and it may be looked for with confidence upon the cotton plant.

The Phaeton butterfly of my illustration is partial to the Figwort family, its list of selec- tions chiefly comprising the turtle-head, toad- flax, schrophularia, moth-mullein, and painted-cup. The latter, with the scar- let leaves posing as



blossoms, no one but an expert would think of associating with the other plants mentioned. But I learn from Scudder that this caterpillar is also found on the honeysuckle—a poser, this, in truth—were it not that it seems a clear case of heedless- ness, an egg that was left while the butterfly was sipping the honey tubes, of course.

My experience has never disclosed the weird-looking eye-spotted caterpillars of the *Troilus* butterfly, or blue swallow-tail, upon any other foliage than those of sassafras and spice-wood, the only two Northern species of

the family *Lauraceæ*, upon which it conceals itself in the neatly folded leaf, as pictured. And yet I see that some collectors have found it also on the prickly-ash, hop-tree (*Ptelea*), and syringa. Concerning the last mentioned, I can offer no explanation, but the other two exceptions—both in the Rue family—have a somewhat interesting significance, taken in connection with the insect next considered. The *Ailantus* silk-worm—introduced into this country from China about twenty years ago, and now very common in certain sections—for years was not known to swerve in its allegiance to its own companion, “tree of heaven.” On the basis, of the facts already set forth, would any one doubt that if its favorite food plant were suddenly exterminated there would be a winged stampede, as it were, to the prickly-ash and hop-tree (*Ptelea*), the only two native allies to the *Ailantus*? But what are the singular facts? The moth, I am told by careful observers, has quite recently proven fickle to its original diet, and yet ignores the kindred plants. As a naturalized foreigner, under new conditions, it has concluded to “do as the Romans do,” and out of compliment takes the *lead of its closest insect ally*, our *Prometheus* moth, whose favorite selections are the sassafras and its relative the spice-wood, upon both of which the *Ailantus* is now occasionally found. There certainly would seem to be some occult affinity between these two orders of plants, *Lauraceæ* and *Rutaceæ*, which the botanists have not discovered.

The exceptions, however, only emphasize by contrast the infinite number of almost infallible instances, enforcing the irresistible deduction of an original universal law of botanical distinction among the insect tribes. These lapses, if not instances of mere temporary aberration eventually to be discountenanced by the “survival of the fittest,” may perhaps be significantly associated with these remarkable freaks of transition noted by collectors—those strange dissimilar double broods of the same insect in which some scientists discover the pioneers of newly created species.*

* In the “Semicolon,” for instance, which I have shown to lapse occasionally in its botany, and the Alope butterfly and many others, the two succeeding broods

It might be imagined that allied plants possessed some essential quality in common by which the insect might associate them, but such an hypothesis is needless, as the butterfly does not taste the plants upon which its eggs are laid, and rarely visits them even when in blossom, its roving days being spent among honey-eyed flowers quite indiscriminately.

While the foregoing facts are largely the result of personal observation, research only further emphasizes the seeming law involved. Whether in the tropics or the arctic regions, from Labrador to Patagonia, the butterflies have always pursued this wise prerogative, and doubtless in many regions yet unexplored by man have even now anticipated the botanists of the future.

In a preferment of the arctic or glacial environment of my subject I have shown unconscious allegiance to the mother-earth my feet have trod—our own blossoming moraines.

Perhaps, also, that inspiring winter butterfly is somewhat responsible for my point of view and the resultant flight of fancy; but if any doubts as to the consequent deductions had been possible with me, they are now forever set at rest; for here, in the middle of January, upon the last day of the completion of my writing, I am visited with a sudden and strange vision of that same inspiring butterfly. I know not whether it is the same free spirit which enraptured my boyhood, or the buoyant sylph which hovered above those Alpen snows, but it lent its presence once more to me to-day, much to the amazement of several witnesses. As I sat in the reference-room of our city library, even as I consulted the authorities upon its own ubiquitous existence, it perched upon the rail close by, and applauded my efforts with its palpitating wings.

of the season are sometimes so widely dissimilar that, according to Scudder, they have been universally classified as distinct species, until their common parentage was proved. Mr. Edwards gives three distinct forms of the Zebra swallow-tail appearing in successive broods in spring, summer, and autumn. It is not difficult to imagine accidental conditions of weather, and resultant effects in habits, or natural selection, through which one of these particular types might be perpetuated as the permanent fixed form.

Thus once more led to the snows, I am reminded of a boreal recluse which I had almost forgotten, and with which I may fittingly bring my rambling essay to a close. Here, among the Alpen peaks of our own country, we may learn a lesson from antiquity, in the example if not of the most beautiful, certainly in many respects the most interesting, butterfly among its tribe. Much has been written concerning this strange lover of the cold. I will quote a recent reference of Grant Allen:

“On and near the summit of Mount Washington a small community of butterflies, belonging to an old glacial and arctic species, still lingers over a very small area where it has held its own for the eighty thousand years that have elapsed since the termination of the great ice age. The actual summit of the mountain rises to a height of 6293 feet; and the butterflies do not range lower than the 5000 feet line. . . . Again, from Mount Washington to Long’s Peak in Colorado the distance amounts to 1800 miles, while from the White Mountains to Hopedale in Labrador, where the same butterflies first appear, makes a bee-line of fully a thousand miles. In the intervening districts there are no insects of the same species. Hence we must conclude that a few butterflies left behind in the retreating main guard of their race on that one New Hampshire peak have gone on for thousands and thousands of years producing eggs, and growing from caterpillars into full-fledged insects without once effecting a cross with the remainder of their congeners among the snows of the Rocky Mountains, or in the chilly plains of sub-arctic America. So far as they themselves know, they are the only representatives of their kind now remaining on the whole earth, left behind like the ark on Ararat amid the helpless ruins of an antediluvian world.”

For 200,000 years, according to geological data, these boreal broods must have wooed the frozen seas, driven southward by the overwhelming ice, companions of the verdant fringe of the vast glacier, following in its retreat, at length beguiled by remnant ice-fields lodged in the “great gulfs” of the Presidential range, and at last stranded among the furrowed peaks.

For years this butterfly in the foreground of my Alpen design was supposed to be confined to Mount Washington, but, as shown above, it has revealed itself on other distant summits. It is also credited to Mount Monadnock, and I think revealed itself to me on the peak of Mount Lafayette, though decoying me

beyond the limits of prudence, and thus defeating capture, or even perfect identification.

Who shall question that through the ages, as now, this mountain sprite has been true to the companion plants upon which its broods are found, even as it is still true in its mimetic wings to the everlasting rocks among which it hibernates?

Thus, whether in the tropics or beneath the glacial drift, the testimonies of the rocks abide, disclosing the prehistoric leaf side by side with the feathery intaglio, telling not of the "idle rover" and "Epicurean of June," but of divine emissaries, sponsors to their companion blossoms through the prescribed period of their being, and myriads of whose species now extinct were linked through the ages, even unto the present, in the faithful bond of the butterflies' flight.



*"A woodland walk,
A quest of river grapes, a mocking thrush,
A wild rose, a rock-loving columbine,
Salve my worst wounds."*

EMERSON.



THE WILD GARDEN

*“Stranger, if thou hast learned a truth which needs
No school of long experience, that the world
Is full of guilt and misery, and hast seen
Enough of all its sorrows, crimes, and cares
To tire thee of it, enter this wild wood
And view the Haunts of Nature. The calm shade
Shall bring a kindred calm, and the sweet breeze
That makes the green leaves dance shall waft a balm
To thy sick heart. Thou wilt find nothing here
Of all that pained thee in the haunts of men
And made thee loathe thy life.”*

BRYANT.



The Wild Garden

"If I could put my woods in song,
And tell what's there enjoyed,
All men would to my garden throng
And leave the cities void."

DURING a recent visit to England I devoted a whole day to a stroll through those glazed acres of the famous London conservatories. After walking in sensuous delight through miles of perfumed bowers and all manner of wondrous floral luxuriance, I was at length invited, as a special courtesy, to view what I was assured would prove the climax of interest and beauty, the reigning sensation in the way of an "orchid hybrid." Following my guide, I soon entered the "propagating-house," wherein are born into the world every year those hundreds of hapless nondescripts against which Nature protests in

vain. There, among a coterie of its kind, in blushing consciousness, more sinned against than sinning, stood the poor innocent which was the talk of the town, a *Cypripedium* mongrel, flanked on either side by the two helpless parent species.

Twelve years of eager waiting, I was told, had this very week rewarded the "culturist" with the first fruit of this unnatural union. An "improvement," it was called, and one in which the instigator seemed to take as much pride as though the waif had deserved the Lord's blessing.

Those voluptuous, oppressive roses, too, which, like the fair ones of certain Oriental countries, are admired, it would seem, in proportion to their overgrowth, all "improved," we are told, from "a mere wild rose." O pagan marplot! How had your entertaining courtesy changed to gall could you have read the vigorous pitying comment beneath the non-committal exterior of your guest! How much else of the mysteries of that hybrid department would have been disclosed to his scientific scrutiny had he dared intimate that he preferred the Lord's *Cypripedium* even to Smith's, and the eglantine of Parnassus to the "improved Oriental Beauty" or the *Souvenir de Grande Duchesse de Paragon, splendidissimum, superbum grandiflorum!* Six thousand dollars for a mongrel tulip, when a pure type, direct from the divine hand, might be had for the asking!

With what a sigh of relief and exaltation of spirit do I leave the degenerate precincts of a garden such as this for the wild garden of innocence and peace!

Truly has Goethe said, "Some flowers are only lovely to the eye, but others are lovely to the heart." For whatever of purely sensuous or intellectual delight the conservatory may hold for us, it is to the wild garden that we turn for the higher delights of the spirit. Though the apple of the Hesperides bloom there, we shall miss its golden fruit.

To be brought face to face with one of those wondrous orchids of the tropics—the *Oncidium papilio* or *Spirito santo*, even robbed of the magic attribute of their native environment—is indeed a memorable experience; but what compared to the



emotional thrill
that awaits me
yonder in the hemlock woods?

Here is a sanctuary unprofaned, pre-
sided over by a presence which always
brings peace without alloy. The dim aisles
are redolent with sacred incense and filled with prophecy. All
my wonted fellow-worshippers are here; one by one I pass them;
now lightly hovering, or there prostrate on the hushed carpet,

WHITE CYPRIPEDIUM.

till at length, my sins confessed, my matins said, my soul refreshed, as I leave the temple inspired for the work of a new day, I am led as though by an unseen hand to a bright spot where the sunbeams penetrate the gloom through a window in the pines, and I stand transfixed! "What," do you ask, "a vision?" Yes. Look! yonder in the chancel, those snowy lilies hovering among the ferns! A vision? Yes. What matters it that my seraph assumed the material form which man has called "Cypripedium?" In the archetypal botany of the Infinite we know not what may be its correspondence.

"Not a natural flower can grow on earth
Without a flower upon the spiritual side,
Substantial, archetypal, all aglow
With blossoming causes — not so far away
That we, whose spirit sense is somewhat cleared,
May not catch something of the bloom and breath."

How many of my congenial spirits everywhere that chance to read my page will have known with me the exaltation of moments such as this! How readily will they pardon me if I "paint the lily" in the hope of reawakening an experience which, perchance, may have become obscured through the years, but for which life has been the sweeter, the happier, and the better! Such is the harvest of the wild garden—divine fruits not reckoned in the conservatory nor yet in the botany.

As in the artificial garden we pass from parterre to parterre, or to conservatory or shaded fernery, each with its appropriate denizens, so in the wilds we find the worthier model, every condition of sod, of light, of shade finding its true expression. The "forest ledge" has its own family, which the botanists well know. The pine wood has its faithful broods; the yielding loam, with "soft brown silence carpeted," is figured with bloom and garland easily numbered in anticipation. The beech woods have a rival company. The hemlocks hold the darling of the mould, the trailing arbutus, always with a numerous attendant complement. The meadow-blooms that fall in the swath of the new-mown hay

we all know—the daisies, the clovers, buttercups, lilies, and meadow-rue. Even in the burning sand-dunes of the sea-shore or the desert we may be sure of a number of faithful missionaries, while the same sand that chances to rim the lake nurses a distinctly different brood.

The swamp claims a long list of choice favorites, while even from the ripples of the lake or the “depths beneath” you may gather the same consistent bouquet.

When the geologist hears of the opening of a new quarry or the blasting of a tunnel he is quickly on the spot for his harvest of crystal. So with the botanist; the same new conditions turn up nuggets for him also.

Burroughs discovered a blasted ledge draped in the beautiful climbing fumitory where the plant had never before been known, which singular fact may possibly throw some light on the old belief which is said to have christened the flower. “The fumitory,” as Gerarde says of an allied plant with similar ways of sudden appearance in broken ground, “is fabled to be engendered of a coarse fumosity rising from the earth, which windeth and wrieth about, and by working in the air and sun is turned into this herb.” How simple it all seems when it is explained!

I once visited a similar blast in a haunt known all my life, and was astonished to find the ruins rosy with literal beds of the small catchfly pink, accompanied by a rank growth of pasture mullein, growing in the depths of a dense wood!

Who knows what a wild garden might be coaxed from a



A GROUP OF ORCHIDS.

spadeful of earth taken at random from the depths of the sod? A fire sweeps over the mountains; next year you will find its black carbon bed afire with bloom that those calcined ledges never saw before; but the wind has been taking care of that. A railroad has perhaps just been desecrating the woods in your vicinity. Follow its embankment and you may pick a bouquet as rare to you as though from the Orient. The railroad track seems to have especial attractions for a number of restless bohemian plants that would seem to thrive on abnormal excitement. The very oily refuse dropped from the engine invites many a sleepless floral gamin, the ambition of whose lives would seem to be to dodge the whirling train or duck beneath the cow-catcher, while they challenge the coals and the clouds of steam. The lithe purple toad-flax is one of these tough little bohemians, and the tiny dwarf dandelion is a favorite companion.

The prospecting miner knows how the lime or gold or zinc or silver will blossom on the surface in those "indicative" flora, the lucrative resources of the keen-eyed "douser," and doubtless the frequent charm that gives the dip to the artful divining-rod.

Scatter wood-ashes almost anywhere on your lawn, and the chances are that you will receive thanks the following year in the breath of white clover, while coal-ashes yield a response in their own kind, as a casual botanical examination of vacant city lots will attest; I have found some of the rarest though not the most beautiful species of our New England flowers among those unsightly ash-heaps.

Indeed, let the botanist go into new fields anywhere, or even across lots by a new path, and the rare bloom that he has been seeking all his life is likely to carpet the ground before him.

The beautiful pansy-like bird-foot violet is at best a not very common species, and is often gregarious; but I once discovered far up a mountain slope, where I would as soon have looked for the Nile lotus, a bed ten feet square as blue as though spread with an azure silk counterpane. I know a certain sand-hill that is clothed in royal purple every year with the same flowers, for they rival the harebell in their blue and the aster in their purple;

and a certain field at Hempstead, Long Island, invites every season its select pilgrimage to visit its sea of bloom. The little blue-eyed grass (*Sisyrinchium*) stars the meadows on sunny summer days, though usually in a widely scattered galaxy; but during a ride last summer I was decoyed from my carriage across a long swampy meadow by a blue haze that seemed to hang over the distant sedges—a cloud which was soon dissipated about my feet in a billion of these tiny flowers.

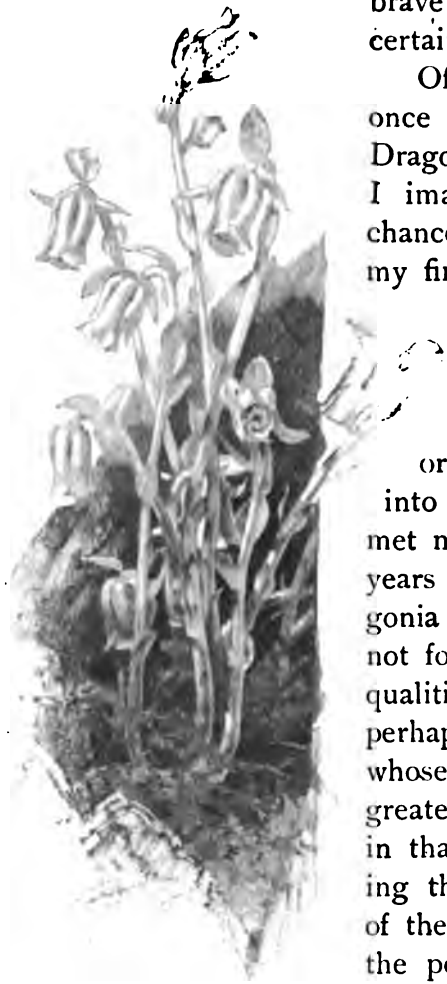
Many a wild botanist—for they are all wild, wild in their haunts, wild with delight and enthusiasm, or else do not deserve to be called botanists—guards as the apple of his eye his orchid brood far up in the mountain tamarack swamp, or his isolated Calypso, or his treasury of sun-dew gems, or other precious riches. We all “know a bank whereon the wild thyme blows.” The heart of Columbus throbs in every true botanist’s bosom. He enters a new swamp or woods with his heart in his mouth. He is all on tiptoe with wonder and expectancy. The cry of “Land ahead!” is always imminent and always realized. But the seasons revolutionize his observations. His autumn soundings are out of date; he must sail by a new chart in the spring. Only last June I stood on the shores of such an unknown country—a large swampy wood, which I had known only in the season of bare trees, when there are few secrets in the woods. What new exaltation awaits me here? I mused. What new friend will accompany me as I emerge from the other side of the forest? I had barely gone three steps when my question was answered, being confronted with a strange botanical shape which I had never seen before. We stood on no formality, for the fame of the individual had already gone before him, and he assured me that he had been looking for me these many years. My new friend was guised in most singular botanical fashion, and I hope he did not chance to notice my smile at his expense. He stood full four feet high, holding above his head, without the slightest seeming necessity, a large tropical umbrella-like leaf two feet across, cut into sixteen drooping divisions; and he sported a flower tucked snugly in his lapel, which was a singular choice indeed for a

Boutonnière—a green hood-like, tubular affair, somewhat suggesting a Jack-in-the-pulpit or skunk-cabbage flower, about six inches long, with a tapering green spadix projecting fully five inches above the summit of the pointed hood, making in all a floral display of nearly a foot in length. He looked like a naturalized brave from the tropics, and, indeed, favors certain of his Brazilian kindred.

Of course my botanical brethren will at once recognize the eccentric blossom, the Dragon Arum (*Arum dracontium*), though I imagine that few of them have ever chanced upon a finer individual than this, my first, though not my last specimen, for I subsequently discovered more.

One of our most common orchids, though hardest to find because of its obscurity, is the *O lacera*, or ragged orchis, its inconspicuous petals being cut into a coarse fringe. Various specimens met me on all sides among the ferns. For years I had vainly sought for the rare pogonia (*Pogonia verticillata*) in my walks—not for its beauty, but for its very retiring qualities; for one does not like to feel that perhaps he has every day slighted a friend whose only fault is her modesty. It is no greater compliment to the cardinal-flower in that it is hailed from afar. Remembering that a certain guardian of the secrets of these woods had whispered to me that the pogonia was to be found here, near a certain turn in an old wood road, I sought

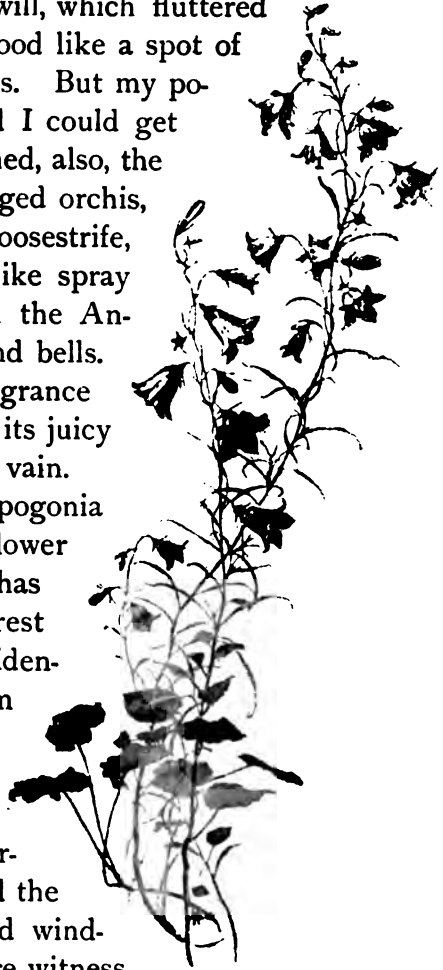
the spot; and there, in an isolated nook among a thick growth of medeola, or Indian-cucumber, ginseng, Solomon's-seal, wood betony, pale Indian-pipes, and other wood growths, I came upon the object of my search growing in profusion, treading them



underfoot ere I was aware; the imitative whorled foliage of the medeolas having beguiled my discrimination. The secret was safe, this secluded haunt having been selected as the choice of all the earth by a nestling whippoorwill, which fluttered from my feet, disclosing her downy brood like a spot of mould down there on the brown leaves. But my pogonias were long past their prime, and I could get little idea of their flower. Here bloomed, also, the small green orchis and the purple-fringed orchis, the Uvularias, and the cranesbill and loosestrife, and the Solomon's-seal with its palm-like spray and drooping yellowish pendants, and the Andromeda with its chime of ten thousand bells. The swamp azalea shed a slight fragrance from its remnant blossoms, and offered its juicy apples that to me are never offered in vain.

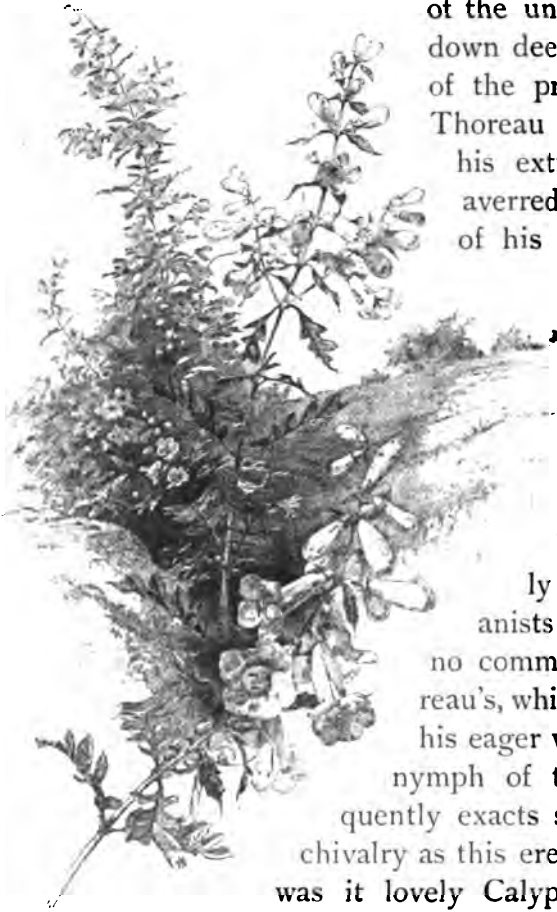
That whispered password to the pogonia opened the door also to a rare wild-flower bed that justly deserves the fame it has won. All the dwellers of the "forest ledge" were here; the rue and maiden-hair; the early harebells hung from the crags above, and continued the dance which the lingering "rock-loving columbines" were now bequeathing; while the spotted leaves of liverworts, and spiry pods of bloodroots, and the plenteous foliage of rue-anemone, and wind-flower, and matted beds of arbutus, bore witness of what a rare May-day had been celebrated hereabouts, and doubtless the sweet deerberry, with its fragrant bells, and the airy fumitory were there, draping the rocks, could I only have happened their way.

The lofty gnarled laurels ever and anon protested "no thoroughfare" as I crossed their path; and once, having made the breach, somewhat to the disparagement of my garments, I was



met with the applause of a whole bevy of the rare blazing-star—their long spires of pure white feathery bloom standing sentinel over a bog of considerable expanse and filling the adjacent air with their almond-like perfume.

A swamp or a bog! What a rallying-cry to the botanist, and what a treasure-ground to the wild-gardener! To say nothing of the untold witnesses of extinct species down deep in the peat, look at the wealth of the present rare spirits it nourishes! Thoreau has been frequently ridiculed for his extravagant expressions. He has averred, among other things, that some of his happiest moments have been spent while “up to his eyes in the mud of a swamp”; and it may be said that those who cannot understand this are not likely to appreciate much else that he has to say, and are consequently to be commiserated. We botanists know all about it. We need no commentator on this passage of Thoreau's, which was so plainly reminiscent of his eager wooing of *Arethusa*, the sweetest nymph of the marshy mist, and who frequently exacts some such pleasant and willing chivalry as this ere she will yield her rosy lip. Or was it lovely *Calypso*, her only rival? Did ever glimpse of the rarest caged exotic awake such a thrill as this which speeds you on through the knee-deep mud to lay your rude hand upon her? I have known even a lesser light to precipitate a similar impetuosity. There among the reeds it lifts its feathery cylinder of purple blooms; another and another reveal themselves among the calamus and blueflags and galingales as



you proceed, half dazed in the witching fragrance, which hangs like incense in the evening mist—an aromatic perfume giving no hint of any other flower, unless, perhaps, the witch-hazel. It is an event to date from, this first victory over Calypso, Arethusa, or even the purple-fringed orchid, just described—not that the latter is so great a rarity as the others; but, then, it is an ORCHID.

Indeed, what is that occult attribute of an orchid which should so differentiate it in our fancy from all the floral tribe? Long before I had heard of Darwin, except as a name, I had been brought beneath their spell.

What wild-flower hunter can ever forget his first glimpse of the white cypripedium sunning its snowy cup far out in the cinnamon ferns or brakes, or its yellow counterpart in the dark woods, or the common moccasin-flower of the hemlocks, or the rattlesnake plantain, which divulged its orchidaceous spirit to me long before I knew its name, and whose unique reticulated leaf has always haunted my fancy as a futile reminder of something which will not be recalled—a relic of the old Adam within me, perhaps?

Calypso and Arethusa are often found in questionably queer company; indeed, to the lovers of the eccentric our flora affords quite a variety show. The botanical enthusiast who has never found the side-saddle-flower or pitcher-plant has a sensation in store for him. I recall one such notable swamp; it nestles in a huge bowl on the side of Black Mountain, Lake George, a quaking sphagnum bog closing in around a tiny lake. I make no hesitation in placarding the haunt, not only because its inaccessibility protects it, but because its army is more than a match for the whole tribe of vandals.

I had heard for some time as a sort of tradition of a certain impassable bog nestling somewhere towards the summit of the mountain, where brimming pitchers were offered to all guests, and one day, like Rip Van Winkle, I determined to sample the good cheer. With what meagre directions I could obtain I mounted my mustang and set out. For the first mile the path was clear,

but thereafter I was obliged to hitch my horse and follow an unblazed trail, through overgrown wood roads and over moss-grown rocks and fallen trees, until I soon completely lost my way, my progress being further besieged by every conceivable sort of mountain bloom to tempt my loitering.

But I must have scented my goal unknown from afar, and at length, after a hard scramble, was rewarded with a glimpse of it through the trees. It was the first real important mountain bog that I had visited. I was prepared for a surprise, but it came in a shape unsuspected. Almost my first glimpse had offered me a puzzle as I looked down upon the tarn beneath the crags, its broad shores impurpled with a composite hue whose elements I could not guess. With eager approach I was soon penetrating the border jungle of clethra, Cassandra, and bay—as I now recall them—whose roots were embedded in the cushioned sphagnum; and having passed the guard, emerged to find myself in a sea of purple pitcher-plants; no beggarly cluster of the hot-house, but a compact throng, extending, I had almost said, for acres on all sides, each cluster crowding among its fellows, and presided over by its company of strange nodding lurid blossoms, and all impacted in the dense moss.

It was some little time before I regained my composure sufficiently to scrape acquaintance with my new friends, who seemed very hospitably inclined, literally dancing on all sides at my approach on the quaking bog, and at length becoming very communicative, drenching my feet at every step with the anointing from their brimming amphoræ.

I remember turning the averted face of the blossom, and wondering whether I could ever coax it to divulge to me the mystery of that singular large disk-shaped stigma which covers a well-kept secret not yet disclosed to the analyst.

Those conscious, thinking pitchers, too, artful pitfalls, each with its disintegrating mass of insect victims! That net-work of turgid lurid veins upon the hollow leaf seems a fitting commentary on their carnivorous lives! Examination of these pitchers disclosed another fact which has probably been noted before, but of

which I had never read—that the insect prisoners were not all victims, almost every pitcher disclosing one, two, or three larvæ which were entirely proof against the digestive arts of the leaf, and which in reality robbed the latter of its rightful prey. These larvæ I soon discovered to be those of a peculiar fly, doubtless a distinct species dependent upon the pitcher-plant, the transformation being completed in the pitchers, wherein I found their chrysalides; and at length, after much search, my conjectures were verified by the discovery of a newly hatched fly creeping up the dangerous tube, which had defied the escape of less knowing insects—an accomplishment for which I doubt not he had been especially equipped by nature.

Another conspicuous eccentricity is the *Monotropa* (we have been treated to the beaker, here is the pipe as well), that pallid child of the dank woods that might well pass for a fungus did we not know that it carries a flower as botanically perfect as the laurel or the *pyrola* or any other of the great Heath family, to which it belongs.

No discourse upon our notable wild flowers would be complete without recalling the foxglove, whose tall sprays of tubular blossoms light up many a dark nook in the woods, and whose pure, even color always suggests to me the canary, even as the cardinal-flower invariably brings another ornithological parallel. Is it not to our flowers what the scarlet tanager is to our birds? But even as the tanager must yield the crown, as it were, to the tiny kinglet whose olive crest conceals the crowning touch of purest red among all our native plumage, so must the cardinal make his prettiest bow to the humble painted-cup, which boasts the brightest dab of red the wild palette can show.



SNEEZE-WEED.

"Scarlet tufts
 Are glowing in the green, like flakes of fire ;
 The wanderers of the prairie know them well,
 And call that brilliant flower the painted-cup,"

sings Bryant of a Western species. But on second thought perhaps the cardinal may still retain his prestige on a technicality, for, strictly speaking, the "brilliant flower" of the painted-cup is a misnomer. The actual blossom is an inconspicuous affair, but it wears a gorgeous cape and mantle which have apparently been dipped half way in the rarest of brilliant dyes, the color being in truth displayed upon the floral leaves rather than on the flowers.

What a fine pure yellow is that of the toad-flax! But our finest and most conspicuous yellows are among the golden-rods and sunflowers and their kin of rudbeckias and sneeze-weeds. The finest orange flaunts in the bloom of the butterfly-weed (*Asclepias tuberosa*). The asters "*Amethystinus*" and *Novæ Anglæ* wear the choicest purple, and in the tiny forget-me-not we find a touch of pure prismatic blue, which nature has here economized as in a turquoise; its like is nowhere repeated in our flora.

I know of few finer and more harmonious displays of color to be found in the whole wild garden than is afforded by a bed of blue lupines—a typical bed, such as I have in mind, with their dense foliage and spires of bloom thrown in bold relief against a background of sunlit sand. It is worth a ten-mile walk to see one such bed in its prime. "Blue lupine" it is called, but it rings the changes on the sapphire tints, and lays the amethyst in tribute as well, with its infinite variety, from deepest purple to palest pink or white, and in its perfect complementary contrast of the background of sunny sand affords a rare harmony of color.

That is a fine sample of maroon velvet which the ground-nut (*Apios tuberosa*) blossom holds within its heart. You will find it on no other petal. This ground-nut blossom is one of the most powerfully fragrant of our native wild flowers, exhaling a perfume somewhat suggesting that of the wild grape, and both of which bring reminders of mignonette.

What a delicious occasional whiff is this which greets us at the portal of the early July woods! and what a pleasant anticipation it brings: the welcome of the

pyrolas, which now hold the syl-

van censer unchal-
lenged—for the arbu-
tus and showy orchis
and moccasin-flower
and squirrel-corn



have had their day, and
the nodding bells of the twin-
flower have rung themselves out.

Emerson

“Saw beneath dim aisles, in odorous beds,
The slight *Linnæa* hang its twin-born heads,”

and how many a saunterer has felt his heart
leap into his throat as he suddenly came upon

LUPINES.

a cluster of the sweet pink flowers in the woods! But these "odorous beds" are strewn with the pale pink bells when the pyrolas come upon the scene, and the tiny creeping-twins of the fragrant partridge-vine hardly make their lisps known as against the more asserting presence of the pyrolas. It is hard to speak in moderation of these perennial woodland plants. There are four or five of them in more or less constant association, all with their lily-of-the-valley breath.

The pyrola is the perennial hostess of the groves. She does the honors at all seasons. Go into the woods at any time and you are sure of her. Even in the bleakest winter's day how do her spires of seed-pods and her fresh, lusty leaves against the snow quicken our pulses and bring back the summer! The shin-leaf, with its light green foliage of spring suggesting a tiny clump of lettuce, is perhaps the most omnipresent of the group; but the two pipsissewas, known as the princess pine and spotted wintergreen—the former with its rich green, highly polished leaf, and the latter dull of surface but conspicuously veined with white—are perhaps the most beautiful, and with their reptilian companions of rattlesnake hawkweed and rattlesnake plantain, form a notable quartet of lowly foliaged plants.

Who has gathered the complete posy of our fragrant wild flowers? I have not yet chanced to see a list that pretended to include them all. My own list I thought complete long ago, but every year adds its fresh item. Here it is up to date—confined, especially, to our New England flora—and with apologies to the slighted ones:

FRAGRANT FLOWERS.

HERBS AND UNDER-SHRUBS.

Trailing arbutus (<i>Epigaea repens</i>),	White clover (<i>Trifolium repens</i>),
Dutchman's Breeches (<i>Dicentra Canadensis</i>),	Buffalo clover (<i>Trifolium reflexum</i>),
Partridge-vine (<i>Mitchella repens</i>),	Yellow melilot (<i>Melilotus officinalis</i>),
Evening primrose (<i>Oenothera biennis</i>),	White melilot (<i>Melilotus alba</i>),
Ground-nut (<i>Apios tuberosa</i>),	Lucern (<i>Medicago sativa</i>),
Toad-flax (<i>Linaria vulgaris</i>),	Twin-flower (<i>Linnaea borealis</i>),
Moth mullein (<i>Verbascum blattaria</i>),	Pine-sap (<i>Monotropa hypopitys</i>),
Red clover (<i>Trifolium pratense</i>),	False wintergreen (<i>Pyrola rotundifolia</i>),
	Shin-leaf (<i>Pyrola elliptica</i>),

- Small pyrola (*Pyrola chlorantha*),
 Pipsissewa (*Chimaphila umbellata*),
 May-apple (*Podophyllum peltatum*),
 Water-lily (*Nymphaea odorata*),
 Devil's-bit (*Chamaelirium luteum*),
 *False Solomon's-seal (*Smilacina stellata*),
 Small smilacina (*Smilacina bifolia*),
 Three-leaved smilacina (*Smilacina trifolia*),
 Starry smilacina (*Smilacina stellata*),
 Purple fringed orchis (*Platanthera psychodes*),
 Arethusa (*Arethusa bulbosa*),
 Calopogon (*Calopogon pulchellus*),
 Pogonia (*Pogonia ophioglossoides*),
 Lady's-tresses (*Spiranthes cernua*),
 Moccasin-flower (*Cypripedium acaule*),
 Yellow lady's-slipper (*Cypripedium parviflorum*),
 Showy orchis (*Orchis spectabilis*),
 Coral-root (*Corallorhiza multiflora*),
- *Hairy loosestrife (*Lysimachia ciliata*),
 Milk-weed (*Asclepias cornuti*),
 Dog-bane (*Apocynum androsæmifolium*),
 *Liverwort (*Hepatica triloba*),
 Everlasting (*Gnaphalium polycephalum*),
 Sweet colt'sfoot (*Nardosmia palmata*),
 Broad-leaved golden-rod (*Solidago latifolia*),
 *Dandelion (*Taraxacum dens leonis*),
 Pasture thistle (*Cirsium pumilum*),
 Sweet scabious (*Erigeron annuum*),
 Peppermint (*Mentha piperita*),
 Horned pondweed (*Utricularia cornuta*),
 Dewberry (*Rubus Canadensis*),
 *Ground-nut (*Aralia trifolia*),
 Yellow bedstraw (*Galium verum*),
 White violet (*Viola blanda*),
 *Canada violet (*Viola Canadensis*),
 *Spurred violet (*Viola Selkirki*),
 Yellow violet (*Viola rotundifolia*).

SHRUBS AND TREES.

- White alder (*Clethra alnifolia*),
 Sweet bay (*Magnolia glauca*),
 Deerberry (*Vaccinium stamineum*),
 White azalea (*Azalea viscosa*),
 Smooth azalea (*Azalea arborescens*),
 Pinxter-flower (*Azalea nudiflora*),
 Swamp blueberry (*Vaccinium corymbosum*),
 Dwarf blueberry (*Vaccinium Pennsylvanicum*),
 *Huckleberry (*Gaylussacia resinosa*),
 Witch-hazel (*Hammamelis Virginiana*),
 Flowering raspberry (*Rubus odoratus*),
 Wild-rose (*Rosa nitida*),
 Wild-rose (*Rosa lucida*),
- Eglantine (*Rosa rubiginosa*),
 Smaller sweetbrier (*Rosa micrantha*),
 Fox-grape (*Vitis labrusca*),
 Summer-grape (*Vitis æstivalis*),
 Frost-grape (*Vitis cordifolia*),
 White-thorn (*Crataegus coccinea*),
 Wild-cherry (*Prunus serotina*),
 *Elder (*Sambucus Canadensis*),
 Honeysuckle (*Lonicera grata*),
 Sugar-maple (*Acer saccharinum*),
 Linden (*Tilia Americana*),
 Locust (*Robinia pseudacacia*),
 Locust (*Robinia viscosa*),
 Apple (*Pyrus malus*),
 Willow (?).

In this list, numbering a total of eighty-two species, I have included a few blossoms that may be provoked into a mild incense; the common thistle, for instance, if we take it as the humblebee does. Of the omitted, the mountain-laurel, or sheep-laurel, and various species of whortleberry, will often yield a perceptible odorous response to a vigorous sniff. Doubtless, too, the two unnamed pyrolas are sweet-scented, had I thought to test

them. I have included the hepatica mainly on the witness of other noses than my own, it never having revealed to me an odor entitled to the distinction of fragrance; certainly no more so than the bloodroot and wind-flower (*Anemone nemorosa*), which have a breath but not a perfume. The inflorescence of the sweet golden-rod (*Solidago odora*) emits a distinct scent from that of its leaves, and various others of the mints than that mentioned yield a sweet blossom-breath which is lost in the aroma of their foliage. I have drawn the line at the secretive blooms, referring mainly to such spontaneous communicative examples as are wont

“to bud out faire and throwe their sweete smels all arownd.”

A few which I have marked with a star may be supplemented with a few words; the dandelion, for instance, without even resorting to the humblebee fashion of smelling, even as you recline near it, yields a readily perceptible and pleasant odor. The ginseng ground-nut and moth mullein are or are not odorous according to their whim. I have given four species of violets, only two of which are commonly accorded perfume, *V. blanda* and *V. Canadensis*. The yellow species, so feelingly commemorated in Bryant's poem, is included here in honor of the poet, who detected its “faint perfume in the virgin air” of April, but which has as yet brought no such sweet message to me. As to the *V. Selkirki*, I confess to a venture as to title, having ascribed that name to a specimen which was brought to me in Williamstown, Mass., late in October, several years ago, and which, undetermined at the time in the absence of my botany, was without doubt the species credited. It was larger by considerable than any other of our wild violets, with the possible exception of the bird-foot (*V. pedata*), and its other characters plainly referred it to the species given. But in addition it exhaled a fragrance almost equal to the delicious English species, and in this respect far surpassed either of our two other fragrant violets. I shall always regret that circumstances prevented my seeking the plant in its habitat and securing its seed, for no such fragrant violet is accredited to our flora.



The toad-flax may or may not be fragrant according to the season. The late autumn blossoms are generally faintly odorous, but a cluster of the earliest bloom is redolent. The larger *Smilacina* is also somewhat whimsical. Perhaps the too fastidious nostril might take exception to the elder and the coral-root as hardly entitled to the attribute of fragrance, relegating them to a front seat, perhaps, among a scented group deservedly in bad odor, and which, more-

A FRAGRANT GROUP ("PYROLAS").

over, make up in quantity what they lack in quality—the chestnut, stramonium, meadow-rue, skunk-cabbage, and carrion-flower—the latter of which, with its clambering green brier and beautiful glossy heart-shaped leaves and spherical clusters of fringy flowers, must be seen only to be enjoyed, to speak paradoxically. In other words, it is more enjoyably viewed from the windward, otherwise we may readily appreciate the expressive impeachment of the discriminating little girl who gave it the name of the “Oh phew! flower.”

Of the blossom odors which possess the breeze, perhaps the wild-grape is the most redolent, its powerful mignonette-like fragrance often filling some secluded bower in the woods like incense. The pretty chime of bells of the deerberry ring out a sweet curfew in the twilight woods, and the fringy white spire of the blazing-star, already mentioned, or devil's-bit, as it is also called—though the gods only know why—deserves credit for a sweet almond-like perfume which I have never seen credited.

How have we hypercritical sticklers for truth stumbled upon that shy “yellow violet” of Bryant's verse!

He apostrophizes it as the *avant-courrière* of spring:

“Of all its train the hands of Spring
First plant thee in the watery mould.”

He opens the season of Flora with this flower. According to him the gentle goddess takes her first vernal peep through the “gentle eye” of the yellow violet, even braving

“the snowbank's edges cold,”

and her last—as she “nods” to sleep—through the “sweet and quiet eye” of the fringed gentian, of which he says:

“Thou waitest late and com'st alone
When woods are bare and birds are flown,
And frosts and shortening days portend
The aged year is at an end.”

And again in his "November":

"The blue gentian's flower that in the breeze
Nods lonely, of her beauteous race the last."

I have sincerely tried to verify these specific statements—all but the "nod"—and must admit without success; but then perhaps I have not yet happened to find that particular sunny slope of Parnassus which the poet discovered all by himself. No, the truth must be met though Pegasus foam and cavort with incense, that of all her train the first flower that is planted in the watery mould by the hands of Spring is the skunk-cabbage, and the bees know it and gather sweets from it even though the poets do not. The swamp-cabbage flower literally breaks the ice in the reconciliation of the warring forces of Boreas and Phœbus. But if the too fastidious must needs rule out this plebeian of the bog simply because he does not appear to advantage in a button-hole, what then? What a brood of wood blooms stand ready to look down on him as they usurp his place! The incomparable arbutus, darling of the mould; the airy rue-anemone; the wind-flower, with its white saucers or pink drooping bells; the rock-flower—a tiny white *boutonnière* in itself; the liverwort; the downy dwarf everlasting; the bloodroot, with ruddy pulse; the squirrel-corn, redolent of hyacinth; the colt'sfoot, with its ginger roots, and the pale spring beauty, to say nothing of the whitlow-flower and dandelion. Which one shall wear the stolen pennant? What change of heart has now come over our beloved poet of the violet? What is the testimony of his later years in his "Winter Piece" as he seeks for the first heralds of spring?

"Lodged in a sunny cleft
Where the cold breezes come not, blooms alone
The little *wind-flower*, whose just opened eye
Is blue as the spring heaven it gazes at—
Startling the loiterer in the naked groves
With unexpected beauty, for the time
Of blossoms and green leaves is yet afar."

There is no "yellow violet" here; but as the "wind-flower" is never "blue," and the hepatica often is, it was of course the latter flower that really "blossomed alone" amid these lingering snows.

In further justice to our poet, who evidently discovered the error of his early botanical ways, let me turn to his chronicle of the Twenty-seventh of *March*, written several years later again, as opposed to his *April* "yellow violet":

"When March, just ready to depart, begins
To soften into April, . . . within the woods
Tufts of ground-laurel creeping underneath
The leaves of the last summer, send their sweets
Up to the chilly air, and by the oak
The squirrel-cups, a graceful company,
Hide in their bells a soft aerial blue"—

a passage which truly holds the mirror up to nature, and disarms our censorship. Such is the sunny spot in the April woods that we all know so well, his "squirrel-cups" being identical with the intended hepaticas of his previous passage, and whose blossoms the yellow violet rarely sees in their prime.

It is to the hepatica, then, that Flora intrusts the first greeting to the returning birds, and the bards leaving the lowly "cabbage"-head to entertain the frogs and lizards, bees and flies.

Thoreau, in one of his books, pretends to give precise dates for the turning of the leaves in autumn—a task as idle as to forecast the début of the flowers; for while the order and association in a given neighborhood is probably identical from year to year, the eccentric conditions of American weather are wont to confound our oracles. In the past season, for instance, the early flowers were two weeks ahead all along the line—the New England line, at least. In ordinary seasons I have frequently picked the little rock-saxifrage (*Saxifraga Virg.*) in early April almost frozen with the cold; and long before the bloodroots and rue-anemone and wind-flowers—a congenial trio—were out; and the little silky-leaved everlasting (*Antennaria plantaginifolia*) has not

won the tribute it deserves as an early riser, vying with the hepatica, as it does, in its anticipation of spring. I have gathered it, with its compact tiny cushions of bloom on the naked stems barely two inches high, in early March, when it had plainly stolen a march on the liverworts in its immediate vicinity. But I have never chanced to pick it beneath the snow, which I have done with both the arbutus and hepatica, having found a ruddy cluster of the former as early as February. But the following experience, quoted from a letter from a friend bearing date of January 25, 1887, Boston, as far as I know beats the record in driving back the vernal bloom towards the season of the asters, and which, greeting the festal flags of the December witch-hazels, carries the possible wild-flower garland all round the calendar: "The 9th of December," writes my friend, "Mr. —, my wife's father, said to me that he felt quite confident that he could go to the woods in Melrose and bring home hepatica blossoms. I had found them myself in January, but it was after a week or more of warm weather, with the ground bare of snow. In this case, however, a foot or more of snow had fallen a day or two before, preceded by icy cold weather; so I said, 'No,' not supposing he had any thought of putting his confidence to the test. But he took the train, went directly to the spot where grew a cluster of plants which he well knew, dug away the snow, picked an open blossom, and brought it home."

In the same letter my observant friend continues: "A year ago, in taking a walk from Fabyan's to the Crawford House, I discovered a plant of meadow-rue (*Thalictrum cornuti*) having purple blossoms. A very distinct variety it seemed to me—a very decided color; not so soft and graceful as the blossoms of the white, but having a quite pleasing effect. The stem of the plant was also of a dark color. You may be sure I was surprised and delighted, as I had never heard of such a thing. I took the root to add to my collection of native plants growing in my garden. Last summer the plant blossomed handsomely. I took the flowers to Horticultural Hall, but no one there had ever seen them, and no description or allusion can I find in any botany. I

have also found a clump of fire-weed plants which have pure white blossoms, which I have plucked for three years. I have come across no one who has ever seen the like—have you?"

Yes, my friend, I have. There are a whole brood of them. Their whiteness is only skin-deep, for they are the black sheep in Dame Nature's household. But she discountenances their pranks, and, as a rule, stirs herself to head off their mischief. It must be admitted, too, that they occa-

sionally put on a very pretty face to cover their waywardness, and their lives would prove harmless if the evil "culturists" would only cease to play the devil with them; for it is from scions such as these that our prized "varieties" are begotten. In

a burned mountainous tract I once found a number of white *Epilobium* such as my friend describes, and I have

met with them occasionally since in my walks. It is a lapse in the plant that is imitated in various other species—abnormal freaks, analogous to the albino among animals, which is recognized as a degenerate type.

For years I saw from my studio window an almost pure white English sparrow. I have seen a white robin, a very pale bluebird, and even as I write a snowy pink-eyed squirrel is roving among the trees near my country home.

In addition to the fire-weeds, I have found albinos of red clover, closed gentian, purple-flowering raspberry, blueflag, burdock, purple *Eupatorium*, lupine, blue violet, and bird-foot violet, and have heard of a white cardinal-flower and white fire-lily. But the prettiest of all these wayward children is the white-fringed gentian. I know a certain plant which every year sends up its candelabra of snowy blossoms,



FIRE-LILIES.

and will continue so to do if my friends the vandals will only be content to

“love the flower,
And leave it on its stalk”;

for at best, and to be consistent, I cannot feel that Nature will long countenance its existence, and fain would I see it die a natural death. There is a long list of similar exceptions to tempt the curious scientific eye to be found in our walks. The purple meadow-rue of my friend is by no means as rare a find as he imagines. He has simply happened to miss it. Almost any favorite habitat of the plant will disclose its purple specimen. Pink yarrow and pink wild-carrot are also frequently to be met with, in the latter case that customary purple-black floret in the centre of the white bloom seeming to have dissolved like pigment and spread throughout the saucer.

I once found a blueflag plant upon which nearly all the flowers were four-parted instead of three, as in the true type; and singularly enough, on examination, I found that the only pod which had approached maturity was empty, its seeds having been devoured by a caterpillar. “Mere chance?” say you. Well, we cannot decide that point. No derision shall change my faith that this caterpillar had a special mission to fulfil.

One of the rarest of all these freaks came to my notice for the first time this summer in a singular specimen of the Indian-pipe, and one which it would seem has thus far escaped the botanist. It was not the “pale pipe” which we all know, but from root to summit was of a deep crimson color, the petals being tipped with bright yellow. Its botanical characters referred it to the ordinary species (*Monotropa uniflora*), the more notable distinction besides the color being a fine close down, which was in decided contrast to the glossy smoothness of the ordinary form.

It was doubtless a mere “variety” and not a new species, and suggests the speculation as to which of the two forms is the true type: whether this ruddy individual may not be a sturdy, faithful remnant of the ancestral stock, and the pale uncanny

“corpse plant” of the dark woods a degenerate penitent which, for some unpardonable lapse from grace in the past, has immolated itself to the sombre life of an anchorite. I half suspect that the “ghost-flower” might even yet be reclaimed; that a few successive generations reared against their will, in the light of day, might once more restore the ruddy pulse, and revive the bloom and crimson flush of health. I sought the open woods in which my crimson pipe was found, but it had evidently bloomed alone amid hundreds of its pallid kindred.

As with the lapsing flowers, so with the verdure. I think I could go this day to a small hickory-tree one-half of the foliage of which is creamy white. I innocently brought a specimen of it once to a noted botanist, and he half proposed to confer upon me the questionable distinction of propagating it under the title of “Variety Gibsoni!” I will venture the guess that the squirrel wastes little time on its shell-barks. There is a parallel case of a certain bramble (*Rubus Canadensis*), a “sport” whose shady haunt I well know. I always see him hanging around the same corner. The leaves of the plant are cut into a deep-toothed fringe almost to the midrib—a charm which the eye of the typical gardener would covet as an instance of where Nature had taken a hand in self-improvement, and outdone herself; but, of course, as might have been expected, the degeneracy is further proved by the few though showy double flowers, that as yet have yielded no fruit that I could discern. I fancy the poor thing is rather pitied than otherwise by the companions in its neighborhood.

Look well to your wild flower, O poet or botanist, ere you claim to know it. How has that little fringed polygala laughed in its purple sleeve as you described its beauties to your friend! Most wild-flower hunters are familiar with this lovely blossom, with its close cluster of leaves suggesting those of the checker-berry, and its singular orchid-like purple-winged flower inevitably suggesting a tiny butterfly with a long fringed tail. It is always a prize, but the real nugget is below. A search down there among the moss at its root discloses a singular secret not generally given away in the nosegay. For this vain purple banneret signals the

way to a new and unsuspected path in our wild garden—the *cleistogamic* flowers—the plant having one blossom for the light and another for the darkness. Like many of its congeners and a long list of other plants, the fringed polygala shows one face to the world and another to mother-earth. “Here, worldling,” she would seem to say, “take my fluttering pennant if you will, but spare my anchor.” These subterranean anchor flowers are borne on long stems, and are entirely without petals, appearing indeed more like small roundish pods than flowers; but they plant the mould with seed and doubtless keep many a spot in the woods perennially tufted with the purple broods, else exterminated by the vandal hand, whether that of botanist or eager childhood. I have rarely met with a wild-flower enthusiast who knows even the spring violet. Take the common blue species, for instance (*Viola cucullata*); you know it of course. “It blossoms in the early spring,” say you. Oh yes, for poet and *boutonnière*, but not for posterity. Go now, even in October, to your favorite violet-bed in the woods, and find your dozen blossoms where there was one in May—if you can. The dry leaves are rattling to the sowing of their seed showers, shot afar from the pods ripening from perfect flowers every day. I have a clump of this wild violet in my city yard, and even as late as November I have picked its blooms, nodding among a veritable galaxy of white three-cornered stars of the open pods, either empty or loaded full with their charge of seed. This flower is not for beauty but for utility, looking merely like a close-pointed green calyx; but it is loaded with a potent energy unknown to its vain vernal predecessor.



FRINGED GENTIAN.

For it would seem to be a law of Nature that fruition is inversely as the petals of the flower. Flowers artificially doubled by turning the stamens into petals are often without seed, or with seeds which are germless. In the wilds where Nature wishes to insure a fruitful life it would seem she sometimes entirely deprives the flower of its corolla, as in the instances given—a pregnant text which is feelingly committed to the prayerful consideration of the world's garden, where all is vanity. This cautious peculiarity is found in various plants, and is doubtless the saving grace of many, as in the case of the beautiful little polygala, otherwise in certain districts eradicated in posies. The cistus or frost-weed has a golden rose or two for the poet, but later on lower branches a thousand microscopic blossoms which bear the responsibility of posterity. The gay young jewel-weed is decked with golden trinkets, but later forgets her eardrops in the cares of maternity. Certain of the clovers, like the peanut, bury their flowers in the earth to insure the seed.

We have a graceful, delicate, climbing vine known as the wild bean, twining about woodland weeds and briers, its drooping racemes of pale pink blossoms and large flat pods giving little token of the queer blooms on subterranean stems, each yielding its tiny, round, hairy, and edible peanut. Hog-peanut, it is called, presumably because, of all grubbers in the woods, the hog, from his natural propensities, is most apt to find it.

The earth about the roots of plants holds other secrets not generally guessed by the bouquet-hunters. Clambering over the stone wall or shrubbery by the road-side or meadow we have another wild vine, whose curious clusters of deep maroon flowers are heavy with the scent of mignonette. It is allied to the hog-peanut just described, and bears the same popular name in our botany—the "wild bean"; rather a misnomer, for it has no bean worthy to distinguish it, and it is no wilder than many another of the bean tribe. It is called, also, "ground-nut"—a misnomer again, as it has no nut; but in the botanical name, *Apios tuberosa*, we get at the kernel of the matter; a turn or two with the spade at the root of the plant discloses the "nuts" in the shape of edible

tubers, formerly a favorite food of those silent tribes whose flints are now turned up by the plough within the shadow of the plant.

What pathetic traditions of the primeval American are brought from the wilderness to our doors in the fragrance of this true native vine! How many of the wild blossoming things among which it now twines are but its comparatively new acquaintances—plants which have usurped the soil in the revolutionary path of the “pale-face,” and equally deserving the historic impeachment of the “rib-grass plantain,” known everywhere among the Indians as the “white man’s foot!”

The list of “naturalized foreigners” among our wildest and most common flora would astonish the botanical neophyte even as it continually does the student of botany. These European floral immigrants have followed the track of the white man, and so monopolized the soil that it is no longer possible to distinguish the native from the naturalized. Indeed, the “true American” would seem to be equally indistinguishable, whether among the blossoms or their patriotic admirers.

Summer after summer, through the medium of the journals, the public is treated to the annual warm discussion concerning the most worthy choice of a national flower; a perennial crop of special pleas of mingled wheat, chaff, and tares, which offers much food for mirthful, tolerant, or serious consideration to the consistent citizen, whether he be botanical, natural historical, poetical, or patriotic in his bias. A long list of candidates has been put in the field. If there has been one feature stranger than another in the amiable and entirely needless controversy, it has been that the one and only authorized floral claimant for the nation’s honor, the one perfect symbol of the democracy, unity, grace, wealth, prosperity, generosity, and beckoning welcome of the new continent, should have found only a bare majority of champions. The wonder is that she should have stood in need of a champion at all, when she speaks so ably for herself along every road-side, in every field, wood, and prairie, from Nova Scotia to Mexico, and from Puget Sound to Key West—a prophet of El Dorado in the primeval wilderness, and a preordained embodiment of the new

and shining light which has since won the christening of "America!" "What shall be our national flower?" is it asked. Say, rather, What *is* our national flower? What other *could* it be than the *golden-rod*?

Let us look at a few of its most popular fair competitors. The mountain-laurel and the wild rhododendron are the choice of many, but these flowers are without any inherent claims to consideration as a national emblem. Like the golden-rod, they are distinctly American botanical types, it is true, and natives of the primeval woods, but there the resemblance ceases; for, unlike the golden-rod, they shrink from the haunts of man, and are fast becoming exterminated in his path.

And here is fair Epigæa, with hesitating step. No, "my pretty recluse!" We want no trailing arbutus on our shield or banner; no shrinking blossom that must be sought out in its exclusive nook, and which permits itself to be trodden underfoot without a token. In the far millennium this lovely flower may serve its turn, but the time is not yet. The shy, blushing bloom hiding its face beneath its leaves is no symbol for a country that looms upon the horizon of the world and beckons to all mankind. The golden-rod alone does this. How irresistibly are its claims asserted! How unconsciously and prophetically are its attributes championed! Even in the conventional torch of our beneficent goddess we see a replica of its spire of bloom.

"The fringed gentian?" say you. A faithful American type, truly, but it is not wide-awake enough to meet the requirements of an ensign. We want no fair-weather blossom, that loses heart at every cloud or drop of rain. Give us an ensign that is always flying its colors, a flower with the same bright face night or day, rain or shine; one that is known not merely to the poet and the swain and the botanist of a restricted vicinity, but to the commonwealth. Such is the golden-rod.

The "cardinal-flower" has had many warm votaries; but the cardinal-flower is a stranger to all but a few of our population, and is known at all only in a comparatively restricted section of our land. Besides, its name is against it. Let us avoid the slightest

opportunity for controversy or contention among the brethren. It would never do to flaunt this firebrand among them.

Many enthusiasts, with more sentiment than discrimination, have commended the dandelion. But are we seeking a national flower? What is the dandelion? A naturalized foreigner—an attribute, it is true, which has much to recommend it; but unfortunately it is more than this; it is the same "dear common flower" the world over—Asia, Africa, Europe—a non-committal, conservative cosmopolitan that smiles as sweetly by the King's highway as by the path of freedom. Do we want the dandelion? Better the loyal witch-hazel, our own discriminating divining-rod, that refuses to be reconciled to royal soil.

The pond-lily has a number of sponsors, but without reason, having no other notable distinction from its foreign counterparts than its perfume—a quality which, up to date, has not been successfully conveyed through the visible arts.

The wild-rose and the violet have recently come prominently to the front as important floral candidates. But where is the country on the globe which will not show us this same wild-rose and violet? Their close counterparts are omnipresent, and our American blossoms have little, in the popular sense, worthy to distinguish them as a national emblem.

One by one these and many other fair claimants have brought their credentials, and though primed for the occasion, retire in discomfiture.

What of the golden-rod? She is not called. She comes with confidence in her heart and victory on her brow; and thus she speaks:

"My name is Golden-rod. I am the ordained messenger of that untold natural wealth which has blessed your land and is still your heritage. My divining-rods are scattered broadcast over your continent. They are in reach of all, and my dividend is a hundred per cent. on every square foot.

"I am a member of a hardy American family, which have always been true to their native sod. There are nearly one hundred of us, all told, gladly living among you, a united family, true

gold, without alloy, having long ago sentenced our only two black sheep to Europe in exile.

“We belong to a noble order known as the *Compositæ*, which means a *unit composed of many*, each of my golden stars being composed of many flowers; and our immediate family are called *Solidago* by your prophets, which name, as one of them affirms, is ‘derived from *solidus* and *ago*, to draw together, to join, to make whole.’

“Am I not indeed Columbia’s true emblem? My being is a harmonious assemblage of individuals with hearts that beat as one; and since those far ages when ‘America’ received her primal christening *E pluribus unum* has been my motto.”

If the golden-rod has not been nominated by acclamation, it is because its claims have not been appreciated. In its selection no sectional jealousy will be aroused. It will certainly be a surprise to most people to know that the genus is practically confined to the American continent—a rare botanical phenomenon—and that of the nearly one hundred American species, *seventy-eight* are found in the United States. The two sole European species, unlike hundreds of other floral immigrants, never have been seen here, much less naturalized.

Considered in the abstract, its conspicuous beauty alone is a sufficient champion; its recommendations of color, grace, stately ornamental symmetry being self-evident, lending itself to all manner of art treatment or conventional decoration. Moreover, if we are to be consistent in our choice; if we are to regard the inherent attributes of the contending flora, it is the *composite* flower that must typify the *union*. And such a flower should be a true child of the sod. Among all the native *compositæ*, the only two genera between which there is the slightest ground for rivalry are the golden-rods, with seventy-eight species, and the asters, with one hundred and twenty-four. But who would hesitate a moment as between the former and the royal group that wears the “purple?”

No, I repeat, the question is not “What shall be our national flower?” The *Solidago* is our national flower and ever will be, even though it continue to cry in the wilderness.

The wild garden is bounded by snow-banks, the heaping drift of November on the one hand, and the thawing ice of March on the other, and the hardy hepatica, witch-hazel, and chickweed open and close the floral season.

But in paying our tribute to the exceptional vigor of these plants, we are entirely forgetting a noted group which hold the honors for hardihood.

Did the "Appalachian" climber ever stop to think what our mountain summits would be without the heath? True, we have none of the heather that impurples the Highland fells of Great Britain, but that foreign type is replaced with us by other species that paint our June mountain ranges with beauty; inspiring missionaries whose mission it is to soften the grim austerity of the crags, to reclaim the bleak desert and reconcile the earth and sky—in short, to carry the garden heavenward. It would indeed be like taking the entire garment from the granite backs of the White Hills were we to withdraw the heath-blooms. How they tuft and pillow the crags and spurs! What a troop of them, too! Rhododendrons and azaleas, with their purple glow flooding the chaparral; bilberries of several kinds making green many a chink and cranny among the rocks; the moss-like cassiope with its nodding bells; dwarf blueberries and cranberries, and cowberries with their deep red and tonic acid fruit. The pretty yellow phyllodoce is here, and the ledum with its leaves backed with their woollen blanket carefully hemmed at its edges, and various others.

Always fresh and green, their blossoms ruddy with the blast or drenched with the flying, freezing scud, exposed to the fiercest storms, even incased in solid ice or buried deep for months beneath mountainous depths of snow, they dwell in peace, and in abiding faith expand their blossom-buds for spring. Do they not speak to us?

"Oh, lovely is the rose!" who, indeed, shall challenge its beauty? This nodding "Mermet" in the beam of sunlight within the conservatory, for instance. What lush life and sensuous con-

sciousness are betrayed in every petal! What a delight to the eye, what a perfect compendium to the disciple of "art for art alone"! Its bewildering complexity of flowing lines, its infinite modulations of form and light and shade and color, each curling, moulded petal in itself an epitome of art, with its half-tones, its single key-note of pure color, and its line of reflected sheen at the curling edge, where the borrowed hue tells of the sky or cloud, or, perhaps, of some neighboring sunny bloom. See the shadows of petal on petal transmitted through the sunlit glow of the overhanging corolla, while all below is painted with complex light and shade, each shaded petal nursing the shadow of itself within its chalice, each shadowed cup, again, lit up with reflected light from within, and carrying around its edge that wondrous gamut of pearly grays which have been the despair of art. Yes, yes, I grant it all; it is ravishing. Paint me the rose, O *Art*, and thenceforth hesitate at nothing!

Verily may I conclude with Goethe, "Some flowers are lovely only to the eye, others are lovely to the heart." Others, again, are lovely to the soul, and it is the wild garden alone that leads us into the clouds.





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